
LIBRARY
OF THE
UNIVERSITY
OF ILLINOIS

640.5
AA
v.4

REMOTE STORAGE


Digitized by the Internet Archive
in 2023 with funding from
University of Illinois Urbana-Champaign

https://archive.org/details/americananalyst04unse

SOME EVERY DAY SUGGESTIONS.

ON HIRING WEARING APPAREL AND BUYING SECOND-HAND CLOTHING.

In the great cities of the United States, following out the example set by those in Europe, it has become an everyday matter to hire wearing apparel, especially that which is fashionable for afternoon and evening use. The new custom seems an outgrowth of costuming for masquerades and amateur theatricals, but goes to much greater lengths. In some establishments a complete outfit is furnished the customer, from "steel pen" coat down to patent leather shoes and black silk hose. The charges are moderate, the clothes apparently clean, handsome and stylish. The impecunious society man, the seedy adventurer, the dissipated Bohemian and man of the world are enabled thereby to rival the successful merchant or the retired business man in the *salon*, the *foyer* and the ball room. What tends to increase the demand for such things is the continuous change in fashion. One season demands plain-finished doeskin trousers; the next a silk-covered lap-seam on the side and tricot cloth are *en regle*. To-day black broadcloth coat and vest are the mode; to-morrow it is blue, with brass buttons and a white duck waistcoat. Not every man can afford to keep abreast with the fashion. Many, therefore, who are content with last year's styles for most social events, but desire to put the best foot foremost on some special occasion, have recourse to the clothes-lender under such circumstances. These clothes are always kept in good order; better, in fact, than the dress suit of the average man. They are generally scented with some delicate perfume, and so appeal as agreeably to the nostril as to the eye.

Yet danger lurks in the custom. Of the men who use such goods the vast majority are, of course, healthy, right-living business men, clerks or young professionals, law, medicine or divinity. Strange to say, struggling theological students and poorly-paid clergymen are among the best customers in the trade. All of these different types of men are, from a hygienic standpoint, admirable members of society. But there is an appreciable minority of very different character. It comprises gamblers in bad luck, sporting men whose finances are at an ebb, newspaper men who are assigned to report social events, professional "crooks" and detectives disguised as gentlemen. These men at times are very apt to infect the clothing with disease germs of various kinds. Frequently these germs are from the complaints with which the wearers are suffering. Here the sporting man, who prefers fast life to respectable society, and the "crook" who passes most of his time in gilded purlieus, stand forth boldly eminent. More often the danger arises from the clothing containing germs of a disease prevailing in the house where the wearer resides. Poverty in the great cities involves crowding together. A home that takes up an entire house means a competence, if not wealth. Most homes are flats, part-houses, apartments, lodging houses and the like. The average New Yorker whose rent varies between $8 and $40 per month is almost always one of at least twenty under the same roof. As shown by the reports of the Board of Health, such houses are seldom in good sanitary condition. Three-fourths of the contagious and infectious diseases which make up the mortality records belong to such places. The germs of these diseases float all through the building in which the patient lives and alight upon any and everything in their immediate vicinity. Thus, for instance, a sporting man, whose betting book has been unfortunate, is invited to one of the immense mixed social affairs for which New York is noted. It may be the Arion, Liederkranz or Old Guard ball; it may be the reception of some great politician, in whose parlors a man's usefulness, and not his reputation or morals, is the only condition of admission; or it may be the conversazione of some relative or friend who overlooks the present on account of something good in his past. He hires a full suit from the clothes-lender, and has it sent to his home. This is a room in one of the cheap hotels in the business quarter, or an equally cheap boarding or lodging house in the side streets of the older part of the city. In the same building, perhaps on the same floor, is some fellow-lodger suffering from diphtheria, scarlet fever, croup, or any of the disorders which are now known to be transmissible by germs. The clothes lie in his room an hour or two, long enough for some of the germs to settle on them, and are then donned by the lessee, who wears them to the place to which he has been invited. During all the period in which he is a guest he is, therefore, a hot-bed of disease. Nor does the evil end here. He returns to his rooms, throws the clothes off and goes to bed. They remain there until the next day, when they are returned to the lender. If before they had one germ in their interstices, they now have ten. That evening they are hired by a poor clerk, who is a husband and father, and again go through the same routine. This time they carry a double danger, one to the family of the wearer and the other to the people at the place where he spends the evening.

As these suits are in use half the time, it is easy to see how many hands they must go through, and into how many homes they must enter. As they are cleaned only when absolutely necessary, it is obvious that every time they enter an atmosphere charged with disease germs, they are liable to become infected. It is equally obvious that this liability grows, and that after a certain amount of experience any article of wearing apparel is bound to become a source of greater or less danger.

These remarks apply with greater force to the wares of the costumer. These are worn and worn until they are a mass of shreds and tatters. They are seldom cleaned, as a little dirt, by some singular popular error, is regarded as an embellishment. They are worn by the lowest as well as the highest, by the vicious and depraved more than by the decent and respectable. While most of them are made up by the costumer, a large amount is bought from starving actors, poor ballet girls and bankrupt managers. Of the extensive "properties," as they are called in stage parlance, which are furnished to each new play and opera, all, after much use, go to the auction room, and there pass into the hands of the costumer. Those worn by the actors proper seldom are the worse hygienically for the wear; those used by the ballet and "supers," people who work for twenty-five and fifty cents a performance, are invariably in horrible condition. Besides disease germs, they often contain vermin. As they are packed together in large stage trunks and boxes, a large number may be contaminated by a single garment, and so introduce suffering and illness to the customers of a dozen different costuming establishments.

Equally applicable are these suggestions to the second-hand clothing trade, which, seldom seen in former years, is now beginning to obtain in every community. Second-hand clothing comes from a variety of sources. The "swell," or dude, as he is differently termed, who will not wear a suit more than a week or two; the widow or executor who disposes of the personal effects of a deceased husband, no matter what may have been his ailment; the starveling who pawns all his wearing apparel and is unable to redeem it at the expiration of the term; the sneak thief and burglar, who make clothing a special kind of booty; the drunkard, who pawns coats and trousers for a drink, or who loses them while intoxicated, and the stewards of hospitals, asylums or prisons, are but a few of these sources.

The liability from such clothes would be far greater were it not for the steam cleaner. Hot steam kills all germ life, and when the most dangerous fabrics, from a sanitary point of view, are thus cleaned, they are rendered absolutely harmless. As probably not one-half are renovated in this manner, the resulting danger is clearly appreciable.

The deductions to be drawn, in view of the premises, are:

1.—Never wear hired wearing apparel.

2.—Never use a masquerade costume unless it is new, or unless you know by whom it has been worn.

3.—Never wear second-hand clothing unless it has been scoured and cleaned in some establishment which employs hot steam for the purpose.

Over 1,000,000,000 cans are used annually by the canners of this country. A box of tin plates, which weighs from 108 to 112 pounds, will make between seven and eight cases of cans. A case contains a dozen three-pound cans, the general size, or two dozen one-pound cans. Taking the average, a box of tin will make about one hundred cans. Thus, about 10,000,000 boxes of tin plates are necessary every year to make the cans to hold the goods packed in this country. The weight of the metal alone is something like 110,000,000 pounds, and the cost about $45,000,000.

BURNETT'S PERFECTLY PURE HIGHLY CONCENTRATED Standard Flavoring EXTRACTS

THE superiority of these Extracts consists in their

PERFECT PURITY AND GREAT STRENGTH.

There is no subject which should more engross attention than the purity of the preparations which are used in flavoring the various compounds prepared for the human stomach.

They are not only true to their names, but are prepared from fruits of the best quality, and so highly concentrated that a small quantity only need be used.

JOSEPH BURNETT & CO., Boston, Mass.

CROSBY'S VITALIZED PHOSPHITES,

From the Nerve Giving Principle of the Ox Brain and the Embryo of the Wheat and Oat.

For twenty years has been the standard remedy with physicians who treat nervous and mental disorders. Formula on every label.

Is used for the cure of nervous derangements and lessened bodily and mental vigor. Restores lost memory, vitality and virility.

Has been used and recommended by Bishop Potter, Bishop Stevens, Pres. Mark Hopkins, Pres. Hitchcock, Prof. Willard Parker, Bismarck, and thousands of the best Brain Workers. It is a Vital Phosphite, not a laboratory Phosphate.

F. CROSBY CO., 56 W. 25th St., N. Y. For Sale by Druggists or by Mail, $1.00.

AMERICAN ANALYST

—) AND (—

PRACTICAL COOK AND HOUSEKEEPER.

A SEMI-MONTHLY JOURNAL OF PURE FOOD, THE SUPPRESSION OF ADULTERATION,

AND EVERYDAY ADVICE TO THE PHYSICIAN, DRUGGIST AND DENTIST.

Office, 19 Park Place. [Entered at the Post Office, at New York, as Second Class Matter.]

VOL. IV.—No. 1. NEW YORK, JANUARY 1, 1888. Whole No. 73

All Postmasters will receive subscriptions for the **AMERICAN ANALYST.**



THE LARD QUESTION.

LEGISLATION DEMANDED IN BEHALF OF A PURE ARTICLE.

There has been a great deal said in the newspapers and trade journals on this subject lately. In New York State a sub-legislative committee held a meeting in Albany December 16th, and agreed to present the following bill at the ensuing session of the legislature:

AN ACT.

The people of the State of New York, represented in Senate and Assembly, do enact as follows:

SECTION 1. No manufacturer or other person shall sell, deliver, prepare, put up, expose or offer for sale, any lard, or any article intended for use of lard, which contains any ingredients but the pure fat of swine, in any tierce, bucket or pail, or other vessel or wrapper, or under any label bearing the words, "pure" "refined," "family," or either of them, alone or in combination with other words, nor unless every vessel, wrapper or label, in or under which said article is sold or delivered, or prepared, put up or exposed for sale, bears on the top or outside thereof, in letters not less than one-half inch in length and plainly exposed to view, the words "Compound Lard."

SECTION 2. Any person who violates any provision hereof shall be punished by a fine not exceeding fifty dollars for the first or one hundred dollars for any subsequent offence.

SECTION 3. This act shall take effect immediately.

The above bill is substantially the same as that passed by the State of Massachusets.

The Cincinnati *Price Current* has the following to say concerning the movement to restrict the sale of adulterated lard:

"There is but one position which can logically be taken on the lard question. This is, that articles which are mixtures, or adulterated, should go to the consumer for exactly what they are, that there should be no fraud or deception in the distribution of products of manufacture under the name of lard. Any legitimate measures which can be availed of to reach this should be had, not less in the interest of the consumers than of the producers, the former representing greatly the larger number. But we do not regard it in order to resort to illegitimate methods to correct the evil—as has been done in the instance of oleomargarine—wherein the producers of this competitive article, which is thoroughly established as a commercial product, have been burdened with a revenue tax, contrary to good policy and equitable consideration of the rights of industrial enterprise. Similar interference with the manufacture of refined or compound lard would be an arbitrary and illegitimate procedure, contrary to the spirit which should govern in the affairs of our domestic industries. The situation now is that the pork packer who manufactures refined lard, using cotton seed oil and beef fat in the compound, can put a 'lard' product on the market in this form to such advantage that the packer who does not command like facilities necessarily operates at a disadvantage in the competition. If this compound lard goes to the consumer as what it really is, the business is wholly legitimate, so long as articles used in this compound are known not to be deleterious. What would be the effect of taxing compound lard? It would be in fact a recognition of this article as a legitimate product, and would not stop its manufacture; probably it would not even reduce the quantity of this competitive product. It would likely tend to cheapen the relative price of the beef fats and cotton seed oil introduced in the manufacture in proportion to the rate of tax, rather than accomplish the object in view by those now interested in agitating such measures, which is ostensibly to do something by which lard shall be restored to its former relation, but in fact to place an embargo upon the competitive facilities which packers who are lard refiners now enjoy. Such legislation not unlikely would have a tendency to direct attention to the claims of cotton seed oil, which represents an important part of compound lard, bringing this product more to the front in a direct way for food uses. If this should be the result, surely the object aimed at by the agitators would not be thus reached."

The *Merchants' Mail*, of Albany, says: "No subject that can be discussed by associations should command more attention than that of lard adulteration. This is an article handled by all the members, and if many of them could be made to realize the stuff they are selling for lard they would be more than surprised. There is lard sold to-day that does not contain one ounce of strictly pure hog's lard. Statistics go to prove that nearly 80 per cent. of the lard now upon the markets is more or less adulterated by foreign substances. Many of our members make their own lard and as a matter of course are not able to compete with the manufacturers of adulterated lard. Every one of these men will realize the force of the following facts. Hogs are worth 7½ cents a pound. The heads and feet are, comparatively speaking, worthless, and bring but a very small price, and making the trunk and body about eight cents. About one-third of this is useful to make lard which after being tried out yields about 60 or 65 per cent. of lard. This brings the price of lard up to nearly twelve cents. The value of any article ought to be worth more than its cost. Is it so with lard? It was only a few years ago that almost every city of any importance had a number of factories where lard was manufactured, giving employment to thousands of persons. Every man thus employed was getting good wages and lard was selling at twelve cents. Where are those factories to-day? Closed. Why? At that time the demand for this article was as nothing to what it is to-day. As the demand increased men with an inventive turn of mind began to consider how and in what manner they could manufacture this article and reap a fortune from that invention. Never was there a truer realization of the old saying: 'Where there's a will there's a way,' than in this very matter of the manufacture of lard. Substitutes were found from which an article resembling lard could be made. Vegetable and mineral oil, often of a deleterious nature, can be compounded with other ingredients, such as starch, caustic, lime, alum, carbonate of potash, salt, potatoes, potato flour, chalk, plaster of Paris, baryta, cotton seed oil and sesame oil, and from these ingredients can be produced an article so closely resembling lard, as to almost deceive an expert. Is it any wonder that a manufacturer of this article exclaimed: 'I can supply the world with lard if there wasn't a hog in the country.' We do not care to be misunderstood upon this subject. If an article, that is healthful in every sense of the word can be manufactured resembling the real, we are in favor of it. But we want the imitation distinguished from the real. We want the former stamped and labeled so that the retailer as well as the consumer shall know exactly just what is being purchased. We are not and never have been in favor of a profit being made out of a lie, whether it is lard or any other article, because it means the swindling of the consumer. It is time for every retailer in the land to stand up and put a stop to this outrageous business. It is time that the few men who are rolling in wealth, gotten by and through a lie, were brought up short. Let associations keep pegging away at this matter until the whole country becomes thoroughly aroused."

To all of which the AMERICAN ANALYST says, Amen. But, gentlemen, allow us to remind you that all of this bogus lard of which you are speaking may be divided in two classes, that which is commercially impure and that which is a vile, unwholesome and filthy adulteration. Your law will protect against commercial adulteration, but that which will more practically protect the stomach and health of the public is the old remedy so often prescribed by the AMERICAN ANALYST and and never yet found wanting: Package goods with the name and brand of a reputable manufacturer and not bulk goods dealt out from under the counter.

BOGUS CHEESE IN CHICAGO.—Persons in the cheese trade in this city report that the counterfeiters of that product are unusually active after a period of comparative quietness. They say that within a radius of thirty miles of Chicago immense quantities of tallow, cotton-seed oil and other substitutes for the genuine articles of "curd" are used in the making of alleged cheese for domestic and foreign consumption. It is time for another season of excitement in the trade such as resulted in a spasm of virtue by the cheese manufacturers a very few years ago. Eternal vigilance would seem to be the only efficient protection against the wiles of the counterfeiter in food, drink, and drugs, as well as in cash.—*Chicago Tribune.*

VELOCITY OF METEORS.—The singular fact is demonstrated that, while the most rapid cannon shots scarcely attain a velocity of six hundred metres a second, over fifteen hundred knots per hour, meteorites are known to penetrate the air with a velocity of forty thousand or even sixty thousand metres per second, a velocity which raises the air at once to a tepmerature of 4000° to 6000° Cent.

American Analyst,

Published on the 1st and 15th of each month.

Subscription, - - - - - - $1 per year.
Single Copies, - - - - - - 5 cents.
Subscriptions to foreign countries, - $1.50.

Remit by Express Money Order, Draft, P. O. Order, or Registered Letter.

Advertising rates on application.

THE ANALYST PUBLISHING CO.,
Publishers.

H. LASSING, M. D., } *Editors.*
T. P. McELRATH, }

No. 19 Park Place, ... New York.

NEW YORK, JANUARY 1, 1888.

ANSWERS TO CORRESPONDENTS.

RUBY.—See last number.

M. J. B.—Address the gentleman at Philadelphia, Pa.

INCANDESCENT.—We will endeavor to get you the information.

PHARMACIST.—Smith's Bitters consist of equal parts of tinctures of cinchona and gentian.

ENQUIRY.—Rigoline is one of the lighter products of petroleum, and frequently sold for petroleum ether.

CURIOUS.—Sorry we cannot comply with your request. It is not of general interest, and would take too much time.

UNDERTAKER.—*What is the best preparation to use to preserve the natural appearance of the dead?* A solution of bicarbonate of soda and nitrate of potash, one ounce each, in a quart of half water, half alcohol, applied every two or three hours, will do it.

THE SULPHUR CURE.

Among the interesting characters in Washington this season is an inventor from this State named Heckert. He is riding at a gallop a hobby in regard to the medical qualities of sulphur. Mr. Heckert says that in reading the history of Italy and other volcanic regions, he found that periods of freedom from epidemic disease corresponded with periods of volcanic activity. In comparing labor statistics, he found one trade in which consumption was unknown, that of sulphuric acid making. It occurred to him that the antiseptic properties of the sulphur fumes killed the disease germs in all these cases. His wife was a hopeless consumptive. He began having her inhale continuously the fumes given off by the boiling of ordinary floured sulphur in water. To his delight she began to mend, and in time was completely cured. In other cases, the names and dates of which are too numerous for repetition, he was successful. While Mr. Heckert patents many of his ideas he is quite willing that the consumptive public should have the full benefit of this. The apparatus is simply a glass retort, with a spirit lamp beneath and a tube from which the patient may fill his lungs with the sulphur vapors. A solution of common sulphur and water boiling in the retort will produce the necessary vapor. So firmly convinced of the feasibility of the remedy has its discoverer become, that nothing but his busy life has prevented his urging some wealthy philanthropist to open a small hospital for consumptives, where it may be given a fair public trial. Many an old custom, remedy or rule of health, had its root as firmly bedded in the truth as the most new-fangled of modern scientific maxims. Probably no one of the endless generations of little Yankees whose grandmothers have dosed them with molasses and brimstone, was ever convinced that the medicine really did him any good.

LARD ADULTERATIONS.

A Washington dispatch says that Senator Ingalls wrote a tart letter the other day to a Boston firm that wanted him to push a bill for the prevention of adulteration of lard, in which he declared that it was his intention to introduce a bill for the protection of all sorts of groceries. In fact, he said, Congress ought to establish a new executive department, known as the Department of Groceries, and its head should be a member of the Cabinet and officially styled the Secretary of Pork and Molasses. What a splendid opening this would be for a snug berth for the president and secretary of a certain organization. They seek honor and emolument, and here it is. Apropos to this, and showing how great minds think alike, another crank has applied to Congress to take charge of all the newspapers in the country and direct how the advertising should be charged for. The fact seems to be that whenever any business seems to suffer from any cause, those who are injured think they have nothing to do but apply to Congress and a law will be passed at once to protect them against all competition. If Congress can do it in one thing, it can be done in another. So let all who suffer from competition, or from inability to make salable goods, go right to Washington and get one of the bills for the protection of impecunious manufacturers passed.

ROYAL CHEEK.

The Royal Baking Powder Company, wincing under the severe castigation administered to it by General Hurst, the Ohio Dairy and Food Commissioner, resorted to its old tricks again last week by having published a letter they pretended to have addressed to that official. An official communication from the Ohio Dairy and Food Commissioner to this journal states positively that no such letter has been received, and that the letter was evidently written for advertising purposes only. The letter is unique; it bristles with mis-statements, and covertly attacks all the competitors of the Royal. It claims to understand General Hurst's denunciations of garbling official reports as applicable only to the competing manufacturers, while the Royal is held up as the sole and majestic shining example of purity, superiority and effulgent excellence. The next thing we expect to hear of the Royal is that its representative in the pure food convention at Washington will insist that Congress pass a law that no baking powder be manufactured or sold except it compares favorably with the standard powder, ammonia and all, as made by the Royal.

BRILLIANT GAS LIGHT.

A few weeks since we published a notice of a new method of increasing the brilliancy of gas light, invented in Austria. We have received so many applications for information on the subject that we have felt it to be our duty to make further inquiry. The information obtained has not tended to increase our faith in the invention. Referring to this burner, Mr. Malcolm S. Greenough, the President of the American Gas Light Association, in an address delivered a few weeks since, says: It has been found in the Welsbach burner that the light, though beautiful when the incandescent mantle was new, deteriorated rapidly, and it was not very long before the gas with which it was heated yielded hardly more light per cubic foot than could be obtained from ordinary burners. It was also found that the mantle was so extremely friable as to render its domestic use almost out of the question; and as a result of these two radical defects it has practically been a failure in Germany, except that in Vienna it can be seen in limited use. The people interested in this burner are busy experimenting with a view to the removal of the defects which they admit exist.

OUR VAST MINERAL PRODUCTION.

The United States Geological Survey, Major J. W. Powell, director, has issued the statistics of the production of minerals during 1886, in a volume entitled "Mineral Resources of the United States, 1886." The total value of the mineral products, taken as nearly as possible at the points of production, was more than $465,000,000, the largest mineral production yet recorded in any country. In 1885 the value was about $429,000,000. Many substances shared in this increase, but particularly iron and steel, which alone showed an increase of $30,000,000. In 1885 bituminous coal was the most valuable mineral product; but in 1886 it was passed by pig iron, which had a higher total value than silver and gold combined. Wonderful progress is shown in the use of natural gas, the consumption being more than double that of 1885 and twenty times that of 1883. It is estimated that the value of the coal displaced by natural gas in 1886 was more than $9,800,000. This is slightly less than half the value of the petroleum. The report is made especially valuable by the work of many prominent authorities on mineral statistics.

THE AMERICAN HOUSEHOLD.

—A DEPARTMENT OF—

PRACTICAL DOMESTIC ECONOMY,

DEVOTED TO THE

PROGRESSIVE SCIENCE OF COOKERY.

(COPYRIGHT.)

BY

MISS JULIET CORSON,

Author of "Practical American Cookery and Household Management," "Family Living on $500 a Year," etc.

FAVORITE WINTER DISHES.—There are certain typical American dishes which maintain their claims upon popularity, despite the increasing favor accorded to European specialties. We have fallen into the habit of calling them American, but really most of them have come to us via New England and the "Mayflower," like many an other English heirloom. It is a pronounced commentary upon the contradictoriness of human nature—especially that of Puritanic strain—that our blue law ancestors, who extended their objections to Church and State, so far as to ban the great Royalist holiday, Christmas, should have tolerated, nay, even fostered, such distinctively Christmas dishes as mince pie and plum pudding. But such is the fact. To-day, the great New England festival, Thanksgiving Day, is graced by both of those unorthodox sweets, while their proper setting, Christmas Day, gains small honor east of New York. This addition of the royalistic and churchly mince pie to the feast of Thanksgiving, when the tables are supposed to bear a portion of every bounty that has been harvested, is all the more singular in face of the fact, that even at the present day, in some ultra-devout Roman Catholic communities, the making of the Christmas mince pie is symbolic of the entombment of Christ. Within the memory of the present generation, Mère Juchereau, a pious inheritor of the ancient Breton custom, has thus defined the significant formula in her journal of instructions to her faithful sisterhood of the Hotel Dieu, Quebec: "The meat represents the body, and should be of the best quality, well kept and carefully prepared. The rosemary is the myrrh, and the brandy or *noyau* the oil; the sweet herbs are the spices; the

640.5
AA
v.4

 REMOTE STORAGE

crust in which it is encased is the tomb; and the small ball of pastry on the top the stone that was rolled to the mouth of the sepulchre." We might trace a fanciful analogy back to the old English term "coffyn" for the case or crust of pie, did we not know that pastries of birds and spice were in favor in classic times, and were introduced to English or rather British palates by the sturdy Romans who fought and ate with equal courage. In Brittany, even to the present time, the Christmas pie is eaten in a spirit of reverence, which ought to have been particularly obnoxious to those stern Protestants who did their best to blot out Christmas from the record of the year. But let them abjure Rome, and her sister Church of England as they would, they could not conquer the innate love of pie that is so general to humanity. For, let who will, laugh at the Yankee preference for that seductive compound, every civilized race has its special dainty of similar kind; and the more highly cultivated the culinary art, the finer the character of its favorite *pâté*; from Strasbourg to China the little pasty reigns supreme.

In our good city of New York, the English Christmas and the Dutch New Year joined hands across the space of the Holiday Week. And although the set New Year feast of our Dutch ancestors is falling into disuetude, we still consume at the proper season, the dishes consecrated to the time of rejoicing between Christmas Eve and the Twelfth Night.

Notable housewives dearly love the recurrence of seasonable feasts, which demand or serve as a justification for the production of their culinary triumphs. Every one will proudly exhibit her special dainties compounded in accordance with formulas which have become family heirlooms. And the younger generation will gladly welcome the ANALYST'S timely publication of such formulas; they need feel no hesitancy in following them implicitly; the results will satisfy the most critical tastes. But we must, in the beginning, disclaim any attempt to practice economy in this direction, for economy is out of the question in composing these poems in "crystyl fruits" and "lucent syrups, tinct with cinnamorn." It is among the savory *ragoûts*, the nutritious soups, the compound salads, and the infinitude of vegetables, that we must work for the establishment of the economic balance. With this reservation in favor of unwonted extravagance, we herald the publication of recipes honored for generations, redolent of rose-embowered still-rooms, and merry gatherings around blazing Yule logs in "our old home."

Place of honor for the kindred sweets, mince pie and plum pudding; whether the savory mixture were baked in "coffyns," boiled in a bag, or minus that restraint, like the plum broth eaten at court as late as the time of George III. Note that Lord Byron's Italian cook was not so far astray when he made soup of like lordship's Christmas plum pudding. Into all these variations of the one idea, the same ingredients entered: "raisynges of Corance, gynger mynced, clowes, maces, the pouders of pepur and canell," (cinnamon) and due proportions of meat and wine. Lovers of long pedigrees may be pleased to be assured that the strain of these edible aristocrats can be traced back, past the plum broths and lumber and nomble (or umble) pyes of noble English households, to the little thrushes in pastry, stuffed with raisins and nuts, which graced classic high feasts in company with century old Falernian. King Arthur is our earliest British authority for this savory combination of fruit and meat, and the record is extant of how he "stole three pecks of barley meal" to make a bag pudding, and

> "Stuffed it well with plums.
> The King and Queen did eat thereof,
> And noblemen beside,
> And what they could not eat that night
> The Queen, next morning, fried."

Which proved that the Queen was a good economist as well as a lovely woman, for fried plum pudding is good enough fare for any mortal, crowned or uncrowned. That the good King Arthur's pudding held popular favor we can gather from Tom Thumb's adventures; and later from divers curious old English cookery books, which give quaint and copious directions for all these sweets. But the readers of the ANALYST will probably prefer definite and practicable recipes to any further ramblings among old books, fascinating as these may be to book worms. And so to business.

A GENUINE ENGLISH PLUM PUDDING.—Stone a pound of raisins, pour over them a glass of brandy and let them stand while the following ingredients are being prepared: a pound of currants washed, dried and rubbed in a sieve with a little flour; a pound of beef suet freed from membrane and chopped fine, with four tablespoonsful of flour; two ounces of citron, and one each of candied orange and lemon peel; the yellow rind and juice of one orange and one lemon; quarter of a pound of shelled almonds, blanched and cut two or three times; one pound of bread, crumbed from the inside of the loaf. Add one pound of sugar, one nutmeg grated, one teaspoonful of salt, eight eggs, one glass each of sherry and brandy, and enough milk to mix the pudding. Butter and flour a mold, put in the pudding, leaving space at the top, close the mold water-tight and boil the pudding steadily for ten hours. Before using the pudding, boil it again for two hours. Turn it from the mold, pour a glass of brandy over it and light it, and send the pudding blazing to the table. A rich sauce should be served with it.

RICH MINCE-MEAT.—This will keep indefinitely in a cool place, and be the better for age. Mix together three pounds of lean beef boiled tender, and three pounds of the trimmings of boiled tongue from about the roots, and chop them fine. Add three pounds of beef suet chopped fine; peel and chop four pounds of good apples, and then prepare and add the other ingredients as follows: Four pounds of stoned raisins; four pounds of currants washed and dried; one pound of citron and a quarter of a pound each of candied orange and lemon peels, the grated rind and juice of four lemons and four oranges; one pound of sweet and two ounces of bitter almonds, blanched and chopped; four pounds of coffee sugar. Season the mince with two nutmegs grated, two level tablespoonfuls of salt, a level teaspoonful each of pepper, ground cloves, allspice, mace and cinnamon; add one quart of good Madeira, half a pint of brandy, and enough sweet cider to moisten the mince. Let it stand over night, and then taste it and decide if more sugar or seasoning are needed; no one flavor should predominate; the mince-meat should have a rich, even flavor.

PICKLED OYSTERS.—Although this favorite winter dainty is well prepared by dealers, the housewife is wise who has it put up under her personal supervision. Choose fresh oysters of medium size, free them from bits of shell, and strain the liquor; put the oysters over the fire in the liquor and boil them three minutes, after the steam begins to rise; then skim them out. Pour out the clear liquor into a clean saucepan, adding to it an equal quantity of good vinegar. To each quart of the mixed liquor, add the yellow rind of half a lemon, a blade of mace, an inch of cinnamon, and an even teaspoonful of pepper-corns; let the liquor boil for five minutes, removing all scum that rises, and then cool it, and pour it over the oysters. It is best to divide the oysters and liquor in small jars, because the contents of each jar should be used the day it is opened. Pickled oysters will keep well in a cool place, if they are put up in air-tight jars. If they are to be used directly, they need only be scalded in their boiling liquor for one minute; they will thus retain their plumpness and tenderness.

OELY-KOKES.—These old Dutch fried cakes were made by melting four ounces of butter in half a pint of milk; this was taken from the fire, and into it were stirred four ounces of dry brown sugar, four beaten eggs, and enough sifted flour to make a dough like that prepared for doughnuts. Half a pound of large raisins, stemmed and stoned, were made ready, and the frying kettle half full of fat was put over the fire. When the fat began to smoke, two raisins were put into a ball of dough about the size of a large walnut, and the balls were then dropped into the hot fat to fry. When brown they were taken up like doughnuts. Sometimes the oely-kokes were made like raised doughnuts, with yeast, standing overnight to become light, a gill of yeast being added to the ingredients named above. These cakes were always found upon the tables of old time Knickerbocker families.

TWELFTH-NIGHT CAKE.—This rich old English cake has been made as follows, with but little change, for centuries: The cake must be made in a warm room. Mix together seven pounds of sifted flour warmed before the fire, six pounds of currants, washed and dried, a pound of raisins stemmed and stoned, half a pound each of candied lemon, orange and citron peel cut fine; a pound of sweet almonds blanched and chopped fine, a pound of loaf sugar sifted, two nutmegs grated, half an ounce of powdered mace, and quarter of an ounce of ground cloves; beat two and a half pounds of sweet butter to a cream, and mix it thoroughly with the above named ingredients; then mix in a pint and a half of good yeast slightly warmed, the yolks of sixteen eggs and the whites of twelve, beaten to a froth; next add enough sweet cream slightly warmed, to just moisten the cake; finally add enough sweet wine like Malaga, to make the cake the consistency of the batter of pound cake. Put the cake into a thick pan or a hoop lined with buttered paper, with several sheets of paper under it thickly sprinkled with flour to prevent burning. Let it rise for a half hour in the warm kitchen, and then bake it in a moderate oven for two hours or longer, testing it with a small bright knife run into the middle. Take care that it does not burn. When cold, the cake can be iced plainly or fancifully.

VOLAPÜK.

A PRACTICAL COURSE OF SELF-INSTRUCTION IN THE UNIVERSAL LANGUAGE.

LESSON I.

SECTION 1.

THE ALPHABET (LAFAB).

1.—World-alphabet (Volalafab).

For the universal language (Volapükiko).

(1.) a, e, i, o, u; ä, ö, ü; = 8 vowels.

(2.) c, j, s, x, z; b, d, f, g, ', h, k, l, m, n, p, r, t, v, y; } = 20 consonants.

In all 28 letters.

2.—Pronunciation of the 28 letters.

(1.) All the vowels are pronounced long, full and clearly, thus:

a, like the English *a* in father.
e, " " " *a* " sale.
i, " " " *e* " me.
o, " " " *o* " no.
u, " " " *o* " to.
ä, " " " *a* " any.
ö, " " German *ö* " schöne.
ö, " " French *eu* " peu.
ü, " " " *u* " une.
ü, " " German *ü* " über.

(2.) The pronunciation of the consonants in Volapük will require a little care and practice at first, although they are very easy and clear.

c, like the English j in John.
j, " " " sh " shore.
s, " " " s " storm.

s, like the English z " zero; when in the same syllable it stands before a vowel.
x, " " " x " box.
z, " " " ts " rats.
z, " " German z " all cases.
b, " " English b " blue.
d, " " " d " dust.
f, " " " f " fast.
g, " " " g " good.
', " " " h " here.
h, " " German ch " machen.
h, " broad Scotch gh " night.
k, " the English k " key.
l, " " " l " long.
m " " " m " morning.
n, " " " n " never.
p, " " " p " purse.
r, " " " r " rare.
t, " " " t " tune.
v, " " " w " wish.
y, " " " y " yonder.

3.—Written and printed characters.

(1.) The letters shown in 1 are written like the English letters.

(2.) The capital letters are just the same as the English letters, as:

A, E, I, O, U,
C, J, S, X, Z,
B, D, F, G,
H, K, L, M, N,
P, R, T, V, Y.

(3.) The capital letters for ä, ö, ü, are written thus: Ä, Ö, Ü.

(4.) The capital letter for (') is made a little heavier (').

(5.) Besides these 28 letters, Volapük has ten other accents, only used however, in translation, to interpret sounds and accents peculiar with some people or language; they are:

a, say ao, for the English a in *all*.
h, " ta, " " " th " *the*.
l', " la, " " French ll " *fille*.
rr, " ra, " " double r " ferry.
m, " ma, " " French m, " *nom*.
n, " na, " " " n, " *mon*.
ŋ, " na, " " " ng, " song.
f, " sa, " " sharp sound before vowels.
j, " zya, " " French j in je.
c', " tzya, " " English ch in *child*.

Section 2.

RULES CONCERNING THE LETTERS (NOMS TONABAS.)

4.—In Volapük every letter must be pronounced, none is mute.

Ex.: *'el*, pronounced as hail, means hair.
yel, " " yale, " year.
cil, " " jeel, " child.
pliéd, " " plee-aid, " praise.
bloda'et, " " blo-da-hate, " hate between brothers.

5.—In Volapük every sound is written by only one letter, and every letter has only one sound.

6.—Each letter is pronounced in every case in exactly the same way. In Volapük the vowels are always *long* (quite different from the English vowels. Ex.—See *a* in father, call, shall, pale, mare, etc.).

7.—In every word the stress, or accent, must be put on the last syllable.

(Only in poetry this rule allows some freedom.)

8.—The softened vowels are ä, ö, ü, of which the ä equals the French ê, while the ö and ü are the very same as the German *ö* and *ü*.

9.—Volapük has no *q* and no *w*; *qu* is written *kv*, pronounced like *qu* in the English words—quite, question; *w* is written *v*, and pronounced like *w* in the English word wisdom.

10.—Volapük avoids all sounds particular to one nation or country, therefore it has not the English *th* nor the French *n* and *n* as used at the end of words, spoken through the nose; but in Volapük all letters must be pronounced clearly.

11.—The *u* always sounds as the English *u* in full, but never as in purity, music.

12.—The letter *j*, without a point, sounds like *zy*, and not like *dzy*.

13.—The *x* always sounds like *ks*.

14.—The *z* always sounds like *ts*.

15.—The *f* is used instead of *v* and *ph*.

16.—The *g* is always hard, as in good, gold, God.

17.—The letter ' ' ' is always pronounced as *h*, in half, her.

18.—The letter *h* in Volapük sounds like the *ch* in the German language.

19.—*Y*, used for *j*, is always a sounding consonant, never a vowel.

20.—Volapük has no diphthongs, as *oa* in broad, *ou* in found; neither has it triphthongs, as *eau* in beauty; but every letter has its own sound, therefore geil (height) is pronounced gay-eel.

21.—The nasal sound of *ng*, as in long, song, does not exist in Volapük; when required, it may be represented by the mark *ŋ* (from the Greek).

22.—To represent in Volapük the letters *ch*, as sounding in the words—Charles, child, write *c* with a mark at the top: *c'*.

23.—The names of the 28 letters are as follows, arranged as in 1:

(1.) a (as a in father), e (as the English a), i (as the English e), o; u (as u in cruel), ä (as e in mess), ö (as eu in the French adieu), ü (as the French u in une).

(2.) ja, sha, za, ksa, tsa;
ba, da, fa, ga, ha;
ga (like the German ch), ka, la, ma, na;
pa, ra, ta, wa, ya; in which the *a* is pronounced as the English letter *a*.

(To be continued.)

CONDENSED MILK.

COMPARATIVE QUALITIES OF THE DIFFERENT BRANDS.

Some time since the AMERICAN ANALYST published an epitome of the report made by the New Jersey Dairy Commissioner on the examination of the various brands of condensed milk. In that report the various brands were referred to by numbers only. The following list includes all the brands of condensed milk and the names of the manufacturers contained in that report which are known in this market.

Makers.	No.	Brand.
N. Y. Condensed Milk Co.,	20	Daisy.
" " " "	28	Crown.
" " " "	29	Eagle.
" " " "	54	Dime.
Anglo-Swiss Milk Co.,	21	Rose.
" " " "	26	Anglo-Swiss.
E. R. Croker & Co.,	41	1st Prize.
" " " "	63	Darling.
H. S. Canfield,	33	Gem.
" "	38	Diamond.

The remarks of the analyst on these samples are here reproduced. The figures of the analysis have heretofore been given.

No. 21 was not in perfect condition; a little gas escaped on opening the can, and the milk was full of bubbles caused by fermentation. No. 33 was so stiff that it would not run out of the can, had a cheesy smell, curdled even when slightly warmed with water, was of a brownish color, and altogether was of an inferior quality. No. 38 was stiff, of a brownish color, and had a somewhat cheesy smell. The other brands need no comment, as the analysis shows the richness and the quality of the original milk before condensation. It is quite gratifying to learn that the popular and most salable brands are of good quality and well preserved. The directions on the cans in general state that, by adding a certain quantity of water, the condensed milk can be made to resemble cream; by adding more it becomes the equivalent of milk. This can never be true. Cream contains from three to four times as much fat as the average condensed milk, and no dilution with water will make such milk resemble cream except outwardly. It would be well if all makers would follow the course pursued by a few, and, while giving such directions as are necessary in using the milk for making desserts, etc., recommend that the advice of a physician be obtained as to the diet of infants. Condensed milk preserved with sugar can never be a fit food for infants. In some instances very misleading statements as to the quantity of fresh milk condensed to produce the contents of the preserved milk cans were made. It will be seen that the condensation is very rarely more than threefold, and usually somewhat less. A well made condensed milk, with cane sugar, should show very little, if any, undissolved sugar, and should be of a nearly white color; having but a faint yellowish tinge. It should have no cheesy taste or smell, and should dissolve readily in about four parts of cold water. Especially should it dissolve without showing separated flocculent particles of caseine or curds.

THE AMERICAN ANALYST.

SOME OPINIONS OF OUR CONTEMPORARIES.

The AMERICAN ANALYST, a semi-monthly journal, devoted to the advocacy of pure food and the suppression of adulteration, has evidently found its place in the country of magazines, and must meet a need in many households and establishments. Its articles are all well and tersely written and decidedly interesting as well as instructive reading. The housekeeping and cookery departments are in the able hands of Juliet Corson, and the present number treats of seasonable dishes. It has, besides, an interesting series of papers on the "Art of Dining," while its article on "Chloroforming," showing the fallacy of the prevalent idea that burglars can chloroform sleeping persons, is novel as well as true. This journal is published at New York, and sold for one dollar per year, or five cents per number.—*Springfield (Mass.) News*, Nov. 21.

The AMERICAN ANALYST AND PRACTICAL COOK AND HOUSEKEEPER is a semi-monthly journal of pure food, the suppression of adulteration, and everyday advice to the physician, druggist and dentist. This publication is filled with interesting and practical information, and costs but one dollar a year. Published at 19 Park Place, New York.—*Bridgeport (Conn.) Standard*, Dec. 1.

PHONOGRAPHIC POSSIBILITIES.

A SUGGESTED SUBSTITUTE FOR THE DAILY PAPER.

There is another possible use of the phonograph that ought to be mentioned. Who will be the first to start the phonogram—a daily vocal summary of just the news one ought to know and just the things one likes to hear without any of the rubbish and padding of the newspapers, that should read itself off at the breakfast table or in the pleasant reclining half hour after dinner? Here is something new in literature—a chance for the exercise of a very delicate sense of the average taste of a certain class by somebody. There would be a chance for the issue of an almost endless series of these dictated little journals, for the varying shades of preference would have to be consulted. How the Back Bay person

of literary tastes would rage, by the way, if the carrier had made a mistake in his delivering, and a gruff-voiced summary of the criminal and sporting news, intended for the coachman's assistant, who is using his master's last year's phonograph without the latest improvements, had been put into his instrument by mistake. And how the coachman's assistant, in his turn, would express his feelings when his phonograph started out in a voice of refined accent with a review of the latest researches into the cuneiform inscriptions. The appearance of these tinfoil cylinders would, by the way, strongly suggest a return to the cylindrical publications of Assyria, and their queer indented inscriptions. This is what the Listener's philosophical friend would call the "return of the cycle."—*Boston Transcript.*

CORSETS.

THE SUBJECT CONSIDERED FROM OPPOSITE MEDICAL STANDPOINTS.

A carefully prepared paper on this important subject from the pen of Dr. Robert L. Dickinson, one of the faculty of the Long Island College Hospital, Brooklyn, was read before the Brooklyn Pathological Society, where it was fully discussed. We shall endeavor to reproduce the same divested of all technical language and in such form that all our readers may be able fully to understand the facts brought out by the author. Dr. Dickinson says:—Ridicule, argument and invective have been freely expended upon the artificial small waist since the days of Martial and Galen. Yet the habit of corset-wearing has received little systematic study, and men's opinions are widely at variance. We frequently meet with the statement that corset-wearing works great injury; we discover a catalogue of five-and-ninety different diseases and disorders due to tight lacing; we find Bouvier, who has written the elaborate and interesting history of this article of dress, vigorously asserting that "the modern corset, moderately tightened, is without appreciable influence on the health of the healthy woman"—and we encounter all shades of opinions between these extremes. But unsupported assertion is poor evidence, although a general impression must carry some weight. To obtain clear perceptions of the action of the corset, I have endeavored to measure the amount of pressure it exerts, to ascertain the distribution of the pressure, and to determine the displacements resulting therefrom, studying the subject with as little bias as possible, stating bald facts and rarely expressing opinions.

First a few words as to past usages. In the days of the primitive man, writes Bouvier, as soon as men were sufficiently elevated above the beast to admire the forms of women, women began to shape themselves to an ideal. Homer's Juno wore a many-layered girdle. The Greek women raised up bosoms and bandaged in prominent abdomens. The fascia and strophinum of the Roman lady, that the later poets tell of, were accused of deforming a chest, or crowding in an abdomen, or bringing about a curvature as effectually as any tight lacing of our day. These were the bandages, numerous and variously stiffened, that Galen inveighed against. In the dark ages the accomplishment vanished from western Europe, not to reappear until the sixteenth century. Then came the day of the perfect flower of small waists, as they have not been known before or since. The old portraits excite our wonder with good cause. The "corps" or corset of Catherine de Medici and Elizabeth was a "terrible engine," a case or sheath of nearly solid metal, rigid and unyielding. "To make their forms thin as a Spaniard's," cried Montaigne, "what hell will not women suffer, strained and lashed (*quindées et cenglées*) to the very quick?" Deep excoriations resulted from this pressure, and sometimes, he says, death ensued, even as Ambroise Paré also testified, citing his sectio cadaveris on a patient who died from such cause, in whom the lower ribs rode over one another (*chevauxçaient*). Before the year 1600, iron, ivory and wooden busks (the "busk" is the front plate of the corset, which may be broad and of one solid piece, or divided and furnished with buttons as in the modern models) are credited with many diseases and much pulmonary hæmorrhage. Men wore corsets for a time. The next step was to begin at the cradle. In order to produce men and women of beautiful proportions and new forms one could not commence too early, and "any mother would have laid herself open to the charge of gross indifference to her children's welfare who neglected these early cares, reputed indispensable to any regular formation of body." The French Revolution swept away the iron and bone cuirass and brought in its stead the comparatively pliable and yielding corset of our time. I find in the journals and current stories evidence that in the early part of this century tight lacing was far more prevalent than to-day. Women occasionally died in the harness. Goodman, of Boston, writing in 1829, speaks of a not unusual practice of wearing the corset at night, tightening it when lying down, and again in the morning on rising. He found servants wearing such busks as to prevent sufficient stooping or crouching to put the kettle on, or place it on any lower level than a bench.

Observations on Corset Pressure.—The first test applied was to determine the external pressure by the manometer, an ingenious instrument to measure pressure between two plane surfaces. The words "tight" and "loose" as applied to corsets need to be defined. They lack precision, but are necessary. We can not determine any limit of contraction in inches as the dividing line, since in cases cited farther on 1½ inch lessening of waist measure with one woman will cause more pressure and more distress than 5 inches in another. The guide must be the patient's sensations—when we can trust her testimony—and signs that are readily appreciated, such as the restricted respiration and movement, evident discomfort when the corset is first hooked, flushing of the face in a warm room, and the indentations in the skin after removal of the corset. Appearance goes for nothing; a large bust and wide hips or shoulders give an impression of slenderness in the waist which may be entirely deceitful. The table of measurements given shows that in pounds pressure per square inch given in decimals, while the severest pressure in the human body, that of the blood, is 3.5 lbs.; the maximum pressure of the corset over the cartilages of the sixth and seventh ribs was 1.625 The total pressure of a corset in three cases was respectively 65, 40 and 73½ lbs., the least pressure in all the cases examined was 21 lbs., the greatest 88 lbs. On taking off a corset one often observes that if the circumference of the waist is taken at once and again a few minutes later an increase of about an inch will have occurred.

Waist Measure.—Six inches difference between the circumference of the waist over the corset and the waist with the corset removed is the greatest difference I have measured. Five and a half and five I have met with once each. The least difference is in those cases where the measurement with and without is the same. The average contraction of the 52 cases given in the table is 2½ inches. The maximum there is 4½ inches, the minimum 1 inch. In the woman who wears no corsets the many layers of bands about the waist, on which heavy skirts drag, are sufficient to cause considerable constriction, as Dr. Mosher states. We have seen that the amount of contraction at the waist bears no constant proportion to the amount of pressure exerted by a corset; we shall see that it bears no constant proportion to the diminution of vital capacity, excepting a very general one. The shape of the corset and the strength of its bones are other factors we must know, and the habit of the individual, the resisting or yielding nature of the abdominal walls, and the readiness with which organs are displaced, bear largely on the problem. The thoracic cavity suffers less diminution in size and alteration in shape from corset-wearing than the abdominal. The principal constricting effect is exerted below the fifth rib. In the mid-axilliary line the lung does not descend below the sixth rib in tranquil breathing. Below this level the "chest-wall" practically is the cover for the abdominal viscera, and it is on these the corsets bear. "The transverse diameter of the chest from the seventh rib to that seventh rib, instead of being greater than that from fifth to fifth, as it is in males, is in females considerably less. The difference is greater or less according as the stays are worn more or less tight" (Sibson). Below the seventh rib the transverse diameter of the bony cage normally dwindles (Sappy), and from eleventh to eleventh is from one to one inch and a half less than the transverse diameter at the seventh or eighth. Bouvier measured one hundred and fifty subjects of both sexes and all ages, and found this relation constant. The corset increases this difference, and starts the downward taper at the fifth rib instead of at the seventh. Narrowing of the triangle between the cartilages of the lower ribs to a groove of the width of a finger is the extreme that Engel has sometimes seen. The inferior edge of the lung is therefore compressed, and its ability to distend the lower part of the pleural cavity seriously crippled. Compensation in part is affected by the tendency of the corset when firmly adjusted to raise the shoulders—which I find quite constant—forcing the upper lobes to do the breathing, as Sibson has proved, raising the thoracic, or five upper ribs, widening the interspaces (also a constant condition in the female), and in this way expanding the highest part of the conical thoracic cavity. Freer play of the apices in women who wear corsets would lead one to expect consolidation at these points to be relatively less frequent than in men, while affections at the base should be more commonly met with. An increased tendency to emphysema of the upper lobes might also be anticipated. One other change may be noted in some frozen sections, and is occasionally observed in examination of the chest—namely a more marked inward curve in the lower part of the sternum than is usually found in men, whereby the antero-posterior diameter of the lower part of the chest is somewhat diminished.

(*To be continued.*)

THE NEWSPAPER DIET.

THE EFFECT OF INDULGENCE IN CHEAP DISHES.

The young man that boards on South Division Street really looked emaciated last night. His eyes were hollow and his cheeks sunken.

"What ails you?"

"A newspaper diet, that's what ails me. Somebody sent our landlady a *Ladies' Home Journal* or something with a list of 'cheap dishes for a week,' and the result is we've had fricaseed tooth brushes and sawdust croquettes all the week. Here's the receipt for the croquettes; I copied it; listen: 'One quart hemlock sawdust, free at any carpenter's; two eggs, five cents; half cupful of flour, one cent; pinch of summer savory and salt. Mix the sawdust, flour and condiments well together; beat the eggs briskly four minutes and pour in; stir well, and shape into croquettes; sprinkle with flour and fry over a hot fire. Butter will cost two cents, fire one cent. Serve hot and eat quickly. There, that costs nine cents; call it ten for round numbers. There were six of us at table that night, and we swallered 'em before we knew what they were made of. We wouldn't a'known then only my roommate got a big chip in his throat and had to reject half of his croquette and the truth came out with it. Giving dinners at a cent a piece, first cost, our landlady ought to grow rich. We didn't make any fuss about the croquettes, but when it came to palming off bean soup which costs five cents a gallon, colored with 'rosaline for beautifying the finger nails,' as tomato soup, the table rose and tore up the *Ladies' Home Journal.* I am willing to eat sawdust in the shape of a croquette, but rosaline in my soup is too much, too much."—*Buffalo Courier.*

CORRESPONDENCE.

PHARMACEUTICAL SPECIALTIES.

Editors AMERICAN ANALYST: The editorial on "Pharmaceutical Specialties" has been read with interest, and we fully approve of your criticism of the article to which it refers. We, as manufacturers, have long been indifferent to these occasional attacks of dyspeptic writers, who irritate themselves into a frenzy over what they think is easy prosperity of a class whom they fancy is interfering with their own special territory. Doubtless the business of ready-made compounds, or "factory made prescriptions," if the gentleman would prefer, is occasionally run into abuses; but what business is not? While we have a high regard for Apothecaries as a class, by our education, feeling identified with them, and have a warm sympathy for their earnest endeavors, close application and conscientious regard of their duties and responsibilities to the community, we nevertheless recognize that they are not "out of the race" in meeting questionable practices that the exigencies of competition sometimes force upon them.

We indulge the opinion that the manufacturers, as a class, are their peers in every respect, in education, ability, conscientiousness, enterprise and in all that goes to make up good citizenship. While there can be no objection (in fact, such action is commendable) to the members of different associations proposing methods of bettering their condition and elevating their business, it is certainly bad taste, to say the least, to indulge in broad, undignified and spiteful denunciation of those who they fancy are infringing upon their business. But it will always be so, and manufacturers, in spite of it, will continue to grow and prosper so long as they produce articles that appeal to the confidence of physicians and show gratifying results in their practice.

Yours truly,

MANUFACTURER.

DOMESTIC DIETETICS.

SEASONABLE FOOD.

January.

MEATS.—Beef, tongue, mutton, pork, venison, ham, kidneys, sausages, liver.

GAME AND POULTRY.—Grouse, hare, pigeon, quail, rabbit, chicken, duck, goose, turkey.

FISH.—Anchovy, bass, bream, carp, chub, cod, eel, crab, flounder, halibut, herring, lobster, mackerel, mussels, oysters, perch, pike, rock bass, rock fish, salmon, smelt, sturgeon, whitefish.

VEGETABLES.—Artichokes, Brussels sprouts, beans, cabbage, carrots, celery, corn, eschalots, garlic, lettuce, onions, parsley, parsnips, potatoes, savory, shallots, spinach, squash, tomatoes, turnips.

FRUITS.—Apples, oranges, bananas.

PRACTICAL RECIPES.

PUREE OF BEANS.—Take one quart of dried Lima beans and soak over night. Put in a sauce-pan with boiling salt water, salted to taste. Add two ounces of butter, one carrot, one onion, three cloves (parsley, thyme, one laurel leaf, two cloves of garlic tied in a bunch), boil until soft. Drain the liquid. Mash the beans. Dilute with the liquid and keep a little thin. Press through a sieve. Return the puree to the sauce-pan and boil again. Add a little more liquid if necessary. Skim well and finish with four ounces of butter, one teaspoonful of chopped parsley, one cupful of cerealine flakes. Season to taste and boil two minutes longer. Serve. Any of the above mentioned vegetables may be omitted to taste.

LARDED LEG OF MUTTON.—Cut half inch wide strips of fat salt pork into lengths of four inches. With a narrow bladed knife make horizontal incisions in the meat to the bone, and, where this does not oppose the blade, clear through the joint. Roll these "lardoons" in a mixture of pepper, mace and vinegar, and insert in the holes made by the knife. If you have a larding needle the task is easier. Set the meat in a dripping pan, dashing a cupful of boiling water over it, and roast ten minutes for each pound, basting often. Ten minutes before taking it up cover with a mixture of a teaspoonful of butter and two tablespoonfuls of tart jelly. Strain the gravy, pour off the fat, and thicken what is left with browned flour, season with salt and pepper, boil and serve in a boat.

MILK BREAD.—One quart of sifted flour, a scant teaspoonful of salt, three teaspoonfuls of Horsford's baking powder, and a tablespoonful of sugar. To three gills of cold boiled milk and two tablespoonfuls of creamed butter (measure after it is melted). Add the milk to the flour, mix with a knife and turn out on a floured board; divide into small loaves and put in hot buttered tins; bake in a hot oven as above described.

STEWED MACARONI.—Half a pound of "pipe" or of "straw" macaroni, one cup of milk, one teaspoonful of minced onions, one tablespoonful of butter, half a cupful of cheese, pepper and salt to taste, bit of soda in milk. Break the macaroni into short pieces, and cook about twenty minutes in boiling water, salted. Meanwhile heat the milk, dropping in a tiny pinch of soda with the onion to the scalding point. Strain out the onion, drain the water from the macaroni and put the milk into a saucepan. Stir in the butter, cheese, pepper and salt, finally the macaroni. Cook three minutes and turn into a deep dish.

SWEET POTATO SOUFFLE.—Six medium-sized potatoes, one gill of cream, one tablespoonful of butter, one teaspoonful of salt, whites of three eggs, a pinch of pepper. Boil the potatoes till tender; when done remove the skins and press the potatoes through a colander. Add the cream, which must be hot, to the potatoes, with the butter, pepper and salt. Now beat it till it is very light, and then stir in, gently, the well beaten egg-white. Heap in a baking dish, brown, and serve.

TO COOK BEEF HEART.—Boil in salted water till tender; make a stuffing of nice bread soaked in the water the heart is boiled in; season with sage and pepper; stuff heart and bake in oven.

DEVILED CRABS.—Put half a pound of the best of butter into a saucepan, with a tablespoonful of flour, and cook together; stir constantly to prevent scorching; add to it a large tumbler of rich cream; season with cayenne and salt; add one onion that has been boiled soft and mashed up into a paste or pulp, and a little grated nutmeg. Then put in your crab meat and a raw egg or two; stir all well together and cook for a few minutes, or until it begins to thicken; then pour it all on a flat dish and let it remain until it is cold. Now fill the back shells of the crabs with the mixture, egg them over with a soft brush, and cover with grated bread crumbs or cracker dust. Lay them in a baking pan, put a small piece of butter on top of each, and bake them in a moderate oven to a delicate brown color, or fry them in plenty of frying-hot lard.

LAYER FRUIT CAKE.—Cream four tablespoonfuls of butter with two cups of sugar; add three full cups of flour sifted with two heaping teaspoonfuls of Horsford's baking powder, one cup of milk, the yolks of four eggs, well beaten, and the four whites whipped to a stiff froth. Bake in two jelly cake pans. Mince a cup and a half of figs very fine and a third of a cup each of pistachio nuts, walnut and blanched almonds, adding the frothed white of two eggs, a little sugar and enough rose water to moisten all. Mix thoroughly and place as a layer between the two cakes. Cover the cake with thick icing made with white of egg, lemon juice and confectioner's or XXX sugar.

GRAPE-FRUIT.—In preparing grape-fruit for the table remove all the peeling, the seeds, and the white membrane enclosing the juicy pulp, and tear the pulp in small sections. Its flavor is acid and pleasantly bitter.

COUGH CANDY.—Boil slowly one-quarter ounce of Iceland moss, one-half ounce of chamomile flowers, and one-half ounce of mullein flowers, or leaves, for about twenty minutes in 1½ pints of water; then put it into an earthen pan, cover and let infuse till cold; then strain and press the liquor from it through a hair sieve, and add to it 2 pounds of granulated sugar and one-quarter of a teaspoonful of cream of tartar. Boil to the crack, take from the fire; pour into greased pans till cold.

CEREALINE FLAKE CROQUETTES.—Into 1½ quarts of boiling milk stir nine ounces of cerealine flakes, putting it in gradually; 1½ teaspoonfuls of extract of vanilla; stir and boil four minutes, then add six ounces of sugar, the yolks of four eggs, well beaten, and mix well on the fire. Turn into a buttered dish and let cool; strew some bread crumbs on the table; divide the preparation into pieces the size of an egg, and give them the shape of a pear; dip in beaten eggs and roll them in the crumbs. A few minutes before serving fry them to a light brown in plenty of hot lard made for the purpose; drain and insert in the small end of each croquette a stick of angelica to form a stem like a pear. Lay them on a dish in a circle, and serve with brandy sauce.

"When doctors disagree, who shall decide?"
ALL AGREE that Sawyer's Crystal Blue is the best.

ADULTERATED RUBBER.—Manufacturers complain that the African rubbers now received do not yield, when strained and cleaned, more than 30 to 55 per cent. pure rubber gum, owing to the natives adulterating with sawdust, bark dust, etc., to overcome the inconvenient stickiness of the juice.

HOW TO DRINK WINE.

SOME HINTS ON THE TASTEFUL INTRODUCTION OF WINES AT DINNER.

The art of knowing exactly how and when and where to drink wine belongs only to the experienced epicure; to understand minutely the proper wines to provide for his guests belongs to a house master gifted with refined taste.

A picture of a great artist requires certain light and, in fact, a surrounding of favorable accessories to enable us to appreciate the talent of the painter; just as a woman, however regal may be her beauty, neither ignores nor disdains heightening her charms by harmonious accord or judicious contrast. So it is figuratively with wine. The art of drinking the superior wines is also a science, the first essential being a thorough acquaintance with the different characteristics distinguishing the respective wines to be produced on the table; to know exactly what wines to serve with certain meats, so as the better to appreciate their flavor, observing the judicious graduating scale, allowing each wine its appropriate entrance and exit.

After studying the bill of fare, it should be decided which are the wines to be offered, and in what order they are to be partaken. The selected bottles should be taken from the cellar four hours previous to the repast, cautiously carrying them into the pantry in the same horizontal position they had in the cellar and in the same sense, so that the dregs or lees may remain at the bottom of the bottle. Particular attention must be given not to shake the bottles when removing them from the cellar to the pantry. The bottles should not be decanted until just before drinking, in order to preserve the aroma and bouquet. The decanter into which the wine is poured ought to be of a slightly tepid heat in winter, but the wine must not be heated.

In what order should the wine be served?

The following rules should be observed for the proper accordance of wines and meats: With fish, white wines; with meat, the fuller red wines; at the end of the repast, the oldest red wines; at the end of the dessert, the liquorous and sparkling white wines. White wines ought to be drunk very cold. In a point of view of flavor or taste, the liquorous white wines, such as those of Sauternes, have two schools amongst epicures, the one preferring this wine at dessert, the other at the commencement of the repast, with the fish. We ourselves prefer the last practice. The rule for the graduation of red wines is to commence by the youngest and least celebrated.

We shall see in what manner these rules are applied by epicures:

Some spoonfuls of soup having by their soft heat prepared the palate and stomach to fill their useful and agreeable functions, the least drop of Madeira gives these organs all the necessary activity.

With the oysters, following salmon or turbot, appear the grand, rather dry or liquorous white wines of Bordeaux, which we prefer to iced champagne used in the north. As soon as the fish has been removed the bottler ceases to serve them.

When the cook has served the meats, the fine ordinary and the superior bourgeois are produced. It is with roast meat, wild boar, venison, etc., that are served the racy and capital first growths of "Saint Emilion" and Burgundy.

When, towards the middle of the repast, the guests have arrived at this satisfactory state of the taste, being now prepared by a skillful series of sensations, the grand red wines of Médoc make their triumphal entry, and the butler proudly announces their names and dates: Chateau Margaux, 1864; Chateau Lafite, 1869; Chateau Latour, 1870.

After these wines the rich Sauternes may be again finely tasted, as well as some glasses of sparkling champagne. EDOUARD FERET.

WINE ADULTERATIONS.

HOW FOREIGN BRANDS ARE MANUFACTURED TO ORDER.

Art follows nature even down to the minutest details. In the animal world, whenever a new and successful type of life is evolved, immediately a dozen contemporaneous forms begin to counterfeit its features, until finally are born imitations that baffle all but the shrewdest observer. This law of imitation has produced living, active insects, that cannot be distinguished from dried leaves, stones, sticks, and even clods of earth, and has largely contributed to the color and beauty of the animal and vegetable kingdoms.

It is similar in the world of art. Hardly anything beautiful, useful or good is invented or discovered by human genius, but what its features are copied and its qualities reproduced until a more or less perfect imitation is the result. Nowhere is this better illustrated than in the wine industry. Here this law of imitation has flourished so long that it may be safely said that there is not any kind of wine made but it is copied in one or more counterfeits. In all of the civilized countries are large and prosperous establishments whose sole business is imitating and adulterating. In Paris, Bordeaux, Bremen, Hamburg, London, Liverpool and New York, are thriving wine concerns, who never handled a drop of genuine wine in their entire commercial career. The expedients resorted to by these manufacturers to produce a liquid that shall pass muster as the juice of the grape are marvellous in number, ingenuity and scientific ability. To make a good imitation demands a thorough knowledge of the thing to be imitated. The adulterator, therefore, calls to his aid the wine expert and the analytical chemist. He collates every fact that science has investigated and described, and has in his library not only the analysis of every wine in the market, but also every rule and process, whether empirical or philosophic, that applies to his trade. Thus armed, he finds it a matter of the greatest ease to make a more or less perfect counterfeit, and to put it upon the market at a much lower price than can be possibly done with the original. While it would be a waste of time and space to enumerate all the methods employed, it may be of interest and benefit to describe a few of the more important.

The simplest one is mixing. The native wines of Ohio, New York, Missouri, and especially California, differ from those of Europe chiefly in being richer in body, flavoring and alcohol—so rich, as to be at times coarse or harsh. A mixture of one-third light bodied Rhine or Bordeaux wine, one-half of the corresponding California stuff, and one-sixth water, will produce a liquid that is hardly distinguishable from a first-class imported vintage.

The proportions given simply apply to one case, and must be varied to suit the palate of the mixer as well as the chemical composition of the ingredients employed. Thus, one-half Santa Rosa, one-third water and one-sixth imported Binger are used by a Fulton Street merchant to produce a fac-simile of the last named wine. The skill and delicacy attained by these mixers is phenomenal. One, a German-American dealer, can taste any ordinary wine once and in fifteen minutes make a composition that can scarcely be distinguished from the original in color, flavor, bouquet, sweetness and body.

A lower class of imitators dispense with the natural grape altogether. One concern on Front Street, unearthed by the New York of Health, in May last, was found to have its vineyard in the cellar and top loft of a vast warehouse. Here, from damaged raisins, currants, elder berries and other cheap dried fruits, it made a wine of the cheapest and vilest kind. It was so vile and poorly made that the "viniculturist" was compelled to fortify it with spirits, and preserve it with salicylic acid to prevent its putrefaction in either glass or wood. The officials learned that he sold the execrable stuff to groggeries, cheap restaurants and to wholesale dealers for mixing purposes. A "vineyard" of similar character in Hudson Street supplies the basing for "Beef, Iron and Wine," "Wine of Coca," "Wine, Iron and Strychnine," and other well known medical preparations. Nor is this miserable work confined to New York City. In the *Courrier des Etats Unis*, this current month, are two book advertisements, one which teaches how to make a superior wine out of raisins, and the other how to make the same thing out of raisins, currants and other materials. The books are written and published in Paris, and must have a large sale and use, both at home and abroad, when their editor finds it profitable to advertise them on this side of the Atlantic.

The mixing described does not produce an unwholesome drink; it is simply a fraud upon the customer, supplying him with what he does not want, under the guise of that which he has ordered. The raisin wine system is a fraud, and may also be of physical detriment. While a pure wine may be made from good raisins by a scientific expert, it would be almost if not quite as expensive as the native vintages of the West. The cheap stuff that must be made in order to gain a profit, must be extracted from the poorest and most unwholesome matters. Made in this manner it is bound to contain dacaying nitrogenous matter, and so to be on the verge of putrefaction. When introduced into the human system, it is apt to produce gastric and enteric troubles, and may occasion disease of a very serious character.

The latest chemical and pathologic researches tend to show that the mysterious poisoning cases which occasionally occur with the use of milk, ice cream, cheese, meat, fish and lobster, are produced by the creation of destructive substances which result from the putrefaction of nitrogenous matter. A badly made raisin wine would, of necessity, contain more of these decomposing nitrogenoids than any of the dietary articles named. Its use, therefore, promises to be a source of danger and a continual menace to all who use it to any appreciable extent. Fortifying it with alcohol and arresting decay by a powerful antiseptic like salicylic acid, may lessen the danger mentioned, but they add new dangers, and ones which are less understood and therefore less easily remedied.

More pernicious than the raisin wines are those liquids which result from purely chemical imitation. Here it makes but little difference what basis is used by the adulterator, whether water and spirits, damaged wine, California wine or water and vinegar. The product he has in his mind's eye has a certain color, flavor and bouquet. For these he applies to the manufacturing chemist and receives just what he pays for and no more. It is possible to use chemically pure ingredients, and produce an artificial wine that would be pleasant and wholesome. Such ingredients, however, are rare and expensive. As the condition precedent of success with the adulterator is a minimum cost of raw materials, he seeks only the cheapest articles in the market. Raw spirits for alcohol, common glucose for refined sugar, pyroligneous acid for white wine vinegar, alizarine, aniline and logwood extract for the coloring matter of the grape, vile essential oils for the delicate œnanthic ether Nature manufactures, are a few illustrations in point. Fortunately for the American public, wines made upon this system are, however, common in Europe, but comparatively rare in the United States. Thus far their production has been confined to the Italian and French colonies of the three or four great cities of the Union. It is nevertheless but fair to presume that the forces which have brought them into being in England and on the Continent are at work in this land as well. Just as soon as a decent livelihood can be gained from their manufacture, they will be produced in greater or less quantity.

In so far as the purity or impurity of these wines affect the health of the people, the State is in duty bound to protect the genuine industry and to inhibit or else regulate the industry which imitates and adulterates. It is hardly within the scope of this brief article to discuss ways and means of applying law to the subject in question. It is sufficient to point out the evil and the danger, and to leave the remedy and its enforcement to the legislature and the courts.

HEBREW BUTCHERS.

HOW A "SHOCHAT" SERVES HIS APPRENTICESHIP.

The Hebrew butcher is no unimportant personage. Generally he does not begin to exercise the duties of his profession until he is twenty-five years of age, for he cannot secure a certificate before that time. The first requisite is that he shall be a man of good character. He is obliged to have a thorough knowledge of the Bible and the Talmud, more especially of those passages which have a bearing on his duties. For at least a year the would-be shochat serves a sort of apprenticeship at a butcher's shop under two shochatim, and finally, on their recommendation, he receives a certificate from the chief rabbi. He must be an expert in preparing his own knife. It must be so sharp and smooth that a microscope will not reveal nicks in the edge. Sometimes the rabbi, professing not to believe that the candidate for shochat has prepared the knife himself, takes it up and jabs the edge, so as to make a nick, returns it and bids him sharpen it anew. At other times he denies that the knife is in good condition, and if the shochat is doubtful of it he gets no certificate. He must "have a mind of his own," and be able to stand by his assertion as against any other man. Years ago a St. Louis shochat stated that the knife was tested by being drawn through water Even a slight nick would cause a ripple on either side, and, if the ripple followed the course of the blade, the latter was pronounced unfit for use. After the shochat has received his certificate it is good for a lifetime, unless a blemish comes upon his character, when his certificate is taken away. He has to be different, even in appearance, from other men. Orthodox Jews observe the injunction, " ou shalt not mar the corners of thy

beard," but his beard must be a little longer than the others, and so must his coat. He is even forbidden to dance with maid or matron. In short, he must be orthodox of the orthodox. They generally are employed by butchers at fixed wages, but when an individual brings a fowl to the shochat to kill, he pays him five cents for a chicken and ten cents for a larger bird. It is told with a thrill of horror among old orthodox residents, that many years ago one of the Jewish families which then lived in a Western city, had an Irish servant maid whose duty it was to take a chicken almost daily to the shochat for killing. With the fowl she received a nickel to pay the religious slaughterer. Moved by a love of gain in a small way, she was wont to pocket that nickel and kill the chicken herself. After about a year her employers discovered how they had been made the victims of Hibernian treachery, and had been defiling themselves with trefe meat.

CELESTIAL DIET.

BILL OF FARE OF A CHINESE DELMONICO DINNER.

A member of a Bremen trading house lately had the honor of taking dinner with a Chinese magnate in Pekin, and has given to the *Popular Science Monthly* the following appetizing description of the feast. The table was set with twenty-two dishes, and was lit with ten large lanterns, the light of which shone clear through brightly colored shades and ornaments. Instead of being served in courses, the dishes were brought in one at a time and passed to the guests severally, beginning with the most distinguished or with the oldest. The merchant has given a list of them, with his comments, as follows:

1. Doves with mushrooms and split bamboo-sprouts. Delicious.

2. Fat-pork fritters or something like fritters. Splendid.

3. Pigeons' eggs in meat broth, the whites hard but transparent. Very good.

4. Chinese birds' nests, with ham chips and bamboo-sprouts (a mucilaginous dish). Excellent.

5. Poultry, different kinds, cooked with mushrooms and bamboo-sprouts. Very agreeable.

6. Duck, with bamboo and lotus fruits, the fruits tasting and looking like an acorn without its cup. Tolerably good.

7. Hog's liver fried in castor oil. Bad.

8. A Japanese dish of mussels, with malodorous codfish and bacon. Horrible.

9. Sea-crabs' tails cooked in castor oil, with bits of bamboo and ham. Would have been palatable but for the wretched oil.

10. A star made of pieces of fowl, bacon and dove, covered with white of egg. Very juicy.

11. Slices of sea-fish and shark's fins, with bamboo and mushrooms—it was hard to tell what kind of a dish it was, but it was rather bad than good.

12. Giblets of poultry with morels. The morels helped the giblets down.

13. Ham and cabbage. Not very good.

14. Ham of sucking pigs, cooked in their own juice.

A pause now ensued, during which pipes and tobacco were brought in. The pipes held about a thimbleful of tobacco—enough for two or three puffs—and we were kept busy filling and lighting them.

15. Land-turtles, with their eggs, in castor oil. Abominable.

16. Ends of ham. Good.

17. Breast of fowl, with sour cabbage. No delicacy.

18. Stale eggs (these eggs had been kept one month in salt and two months in moist earth). The whites looked like burned sugar, and were transparent. The yolks had a greenish color, and the embrios appeared dark, rolled together, and perfectly recognizable. A terrible dish.

Dessert: Conserve of sitzon, a red fruit that looks like a shadberry, and tastes like a currant. Good.

2. Dark-green fruits, having oval seeds like those of a plum, preserved in brandy. Good.

3. Crabs' tails cooked in castor oil.

4. A green, oval fruit, with a long, hard seed, resembling a large green olive, but sharp and sour, and very disagreeable to European taste. Light cakes. Very fine. Nuts; almonds and castor oil seeds, roasted and candied with sugar. Good even to the castor oil seeds. Macaroni with sesame seeds and three-cornered cakes covered with castor oil-seeds. Passable. Various bonbons, very moderate; baked lichis. The lichis is the finest of Chinese fruits, having a flesh with the taste of the best grapes. Shaddocks and maudon oranges. Good.

The only drink was tea, very weak and without sugar, and Jamion, a rice wine, which is drank hot like tea, and is wretched stuff.

LITTLE KNOWN FOODS.

A DISCUSSION OF GARLIC, ESCHALOT AND CHIVES.

"Popular as garlic is with the French, Spaniards and Italians," writes Tom Jerrold in the *Lady's Pictorial*, "it can scarcely be said to have found a firm footing with us as yet, either in our kitchen gardens or in our culinary preparations. There is a widespread notion among English housewives that garlic is coarse, intolerably strong—in fact, unfit for genteel consumption. In a perfectly crude state it assuredly is somewhat potent to the palate; but few ladies would, I imagine, care to partake of any of the onion tribe absolutely raw, unless it be the very, very small spring onions that are introduced into salad. If garlic has gone through the simplest form of cooking, it is milder and pleasanter in flavor than our ordinary onion. A clove of garlic chopped very fine is admissible with almost any dish or salad, provided, let me say, that those who are to partake of the dish do not object to the flavor. *Gigot à l'ail* is a favorite dish in France, and very delicious it is; the garlic is boiled in no fewer than three separate and distinct waters before the cloves are inserted into the mutton; this, of course, greatly modifies the strong taste and unpleasant smell. The flavor of sausages is vastly improved by having a few cloves of garlic fried with them. The same may be said of chops and steaks wherever onions may be used garlic can be substituted, and for many of the delicate processes of the culinary art the latter is the preferable ingredient. The root will grow in any light soil, and March is a good time to plant it. The little bulbs should be disposed in rows six inches from bulb to bulb, and the same distance from row to row, the bulbs being placed an inch beneath the surface, care being taken to put the bulb in an upright position, the broad end downwards. The after-cultivation is simple enough, all that is necessary being to keep the ground free from weeds, and in June the leaves should be knotted together to prevent the plants from running to seed. At the end of July the crop may be got up for use. When the green leaves are used they should be cut close down to the ground, when a fresh crop will soon appear. Eschalots have been for many years considered a dainty among the tribe of onions; their flavor is so mild, that those who cannot eat of any other form of *allium* will tolerate eschalots. It is also one of the oldest known species; the Romans, there is scarcely a doubt, were well acquainted with them, giving them the name of Ascaloniæ. It is supposed that they were taken to Italy from Ascalon in Palestine; and Hasselquist, who travelled in that country in the time of Gerard, sent the latter some of the flowers of the eschalot, which he found growing wild. The only reason for believing that the Ascaloniæ of the ancients were not our eschalots, is that Theophrastus mentions that they can only be grown from seed, whereas it is well-known that eschalots are propagated — like garlic and chives — by means of offsets planted on the soil, or rather just under it. Chives were at one time a very favorite relish for eating with bread and butter, before early spring onions were ready for pulling. At the present time they are but little cultivated, being generally found in those old-fashioned gardens where there is no hard-and-fast line of distinction drawn between the ornamental and useful, and where an edging of chives is scarcely considered out of place to a bed of pinks, sweet Williams, or other old-fashioned flowers. A light, rich soil suits the chive best, but it will grow anywhere, providing there is not too much shade. The offsets should be planted in March or April, in clumps of eight or ten, the clumps being a foot apart; the bulbs should be got up and stored as soon as the leaves decay."

BOGUS WINES AND LIQUORS.

HOW THEY ARE MADE, AND WHAT THEY ARE MADE OF.

There is a tendency on the part of the public sometimes to over estimate adulteration, or rather to go to the two extremes, that is to believe on the one hand that there are no genuine wines and liquors, and on the other hand that all this cry of adulteration is sensational, and that all wines and liquors are pure, only varying in quality. The happy mean between these two ultra views comes nearer to the truth. Generally speaking, when you buy wine or liquor of a well-known brand from reputable firms who know what they are selling, and to whom the purchaser is willing to pay a fair price, you can rely upon the goods being what they are represented. It does not follow that because goods are adulterated they must necessarily be poisonous, yet as they are not what they are represented, they are a cheat and fraud upon the purchaser and generally injurious to health. It is self-evident that a liquor compounded of spirits with artificial flavoring can never be the equal of a natural matured pure liquor. To give the reader some idea of the nature of these adulterations, we shall furnish the formulas in use in a large liquor compounding house, omitting the quantities, as we do not propose to furnish instructions for adulterators.

BOURBON WHISKEY.—Spirits, young hyson tea, dried peaches baked, loaf sugar, cloves, cinnamon. Another formula calls for rectified spirits, burned barley, sweet spirits of nitre, dried peaches, brown sugar, allspice and cinnamon.

WHEAT WHISKEY.—Rectified spirit, sweet spirits of nitre, tincture of rhatany, simple syrup, tincture of cinnamon with one-sixth of the whole genuine wheat whiskey.

APPLE JACK.—Rectified spirits, simple syrup and pineapple juice.

IRISH WHISKEY.—Rectified spirits, acetic acid, acetic ether, creosote and simple syrup.

SCOTCH WHISKEY.—Rectified spirits, acetic acid, simple syrup and creosote.

HOLLAND GIN.—Spirits, sweet spirits of nitre, oil of juniper and oil of caraway; or rectified spirits, oil of juniper, oil of caraway and sal-ammoniac.

JAMAICA RUM.—Spirits, sweet spirits of nitre and tincture of kino, or spirits, tincture of kino, syrup and butyric acid.

NEW ENGLAND RUM.—Spirits, genuine St. Croix rum, spirits of nitre, sal-ammoniac, nitric acid or spirits, spirits of nitre, sal-ammoniac and nitric acid.

ST. CROIX RUM.—Spirits, licorice root, winter bark, anise seed, syrup, tincture of catechu and butyric acid.

COGNAC BRANDY.—Spirits, peach pits, winter bark, bitter orange peel, sweet oil, cognac oil, œnanthic acid, acetic acid, bruised raisins and syrup.

FRENCH BRANDY.—Spirits, dried peaches, crude tartar, tincture of japonica and spirits of nitre.

We have given enough formulas for one article. We have in our possession formulas for peach brandy, cherry

brandy, raspberry brandy, rose brandy, blackberry Rochelle, lavender and ginger brandies, besides some hundred receipts for making all kinds of bogus wines. The latter will make interesting reading, though not very appetizing.

A LIBERAL MARGIN.

FOODS THAT ARE BENEFICIAL TO PHYSICAL CONDITION.

"It is very peculiar to consider the various systems that are published to preserve health and become athletic," remarked a well-known athlete to a *Mail and Express* reporter. After a pause the fine specimen of physical manhood continued: "One writer will say don't drink green tea, another thinks going to bed on a full stomach is the road to vigor, and I say that what is food for one person is poison for another. It is the adaptability of each constitution to certain hygienic rules. 'Oh, you should eat rare meat to grow stout and strong,' dogmatically asserts one authority. If rare meat is craved by the appetite it will be easily assimilated and digested, but to force it does more harm than good. Well cooked, plain food is always considered healthier than raw stuff. I once suffered from dyspepsia and made a study of food. After several years I found that the following were generally more easy of digestion than anything I ate: Partridge, chicken, turkey, mutton, venison, hare, sweetbread, pheasant, grouse, beef tea, mutton broth, milk, turbot, haddock, flounders, sole, fresh fish generally, roasted oysters, stale bread, rice, tapioca, sago, arrowroot, asparagus, sea kale, French beans, cauliflower, baked apples, oranges, grapes, strawberries, peaches, toast water, black tea, sherry wine, claret and ale. In a moderate scale of easy digestion I placed beef, rabbit, duck, young pigeon, wild waterfowl, woodcock, snipe, soups, eggs not hard boiled, butter, turtle, cod, pike, trout, raw or stewed oysters, potatoes, beets, turnips, cabbage, spinach, artichoke, lettuce, celery, apples, apricots, currants, raspberries, bread, farinaceous puddings, jelly, marmalade, rhubarb plant, cooked fruits, cocoa, coffee, porter. Those very hard to digest I discovered to be: Clams, pork, roast veal, goose, liver, heart, brain, salt meat, sausages, hashes, mackerel, eels, salmon, herrings, halibut, salt fish, lobster, crabs, shrimps, mussels, oil, melted butter, hard boiled eggs, cheese, fresh bread, muffins, buttered toast, pastry, cakes, custards, nuts, pears, plums, cherries, pineapples, cucumbers, carrots, parsnips, peas, beans, mushrooms, pickles, chocolate and champagne. Persons in good, sound health, who have splendid digestion, of course can partake of any of the food mentioned without danger, provided they do not gorge. It requires frequently a great deal of strength to dispose of the gourmand's meal, and the food he has eaten acts as a slow poison, draining his vitality. Everybody who has good health constitutes herself or himself a lecturer and authority upon the subject. I notice many recommend frequent rub-downs and baths. To bathe and rub the skin dry is healthful after exercise, but too much of it does more harm than good. There is a limit to all things. Too much exercise is injurious, and having fine muscles does not indicate a vigorous, healthy circulation. Long walks taken at a slow pace do no good whatever. Walking exercise should be brisk enough to start a gentle perspiration, and then great benefit is derived. There is no specific rule to become healthy and strong save one—plenty of open air exercise, temperance, wholesome food, sufficient sleep, cleanliness and a good conscience."

TWO OF A KIND.—"You love my daughter?" said the old man. "Love her?" he exclaimed passionately; "why, sir, I would die for her! For one soft glance from those sweet eyes I would hurl myself from yonder cliff, and perish, a bleeding, bruised mass, upon the rocks 200 feet below!" The old man shook his head. "I'm something of a liar myself," he said, "and one is enough for a small family like mine."—*New York Sun.*

THERMOMETERS.

WHY THE USEFUL LITTLE INSTRUMENTS CANNOT ALWAYS BE TRUSTED.

During the hot spell thore is no instrument that is studied more carefully than the thermometer. Every one wants to know how hot it is each day, and all continually consult these little glass tubes. These vary sometimes several degrees at the same instant. Said a dealer in thermometers to a reporter:

"Thermometers are very often curious instruments. Sometimes we find one that is all right at certain points, and at others it will be several degrees out of the way. These variations are caused by irregularities in the tube. The tubes are very frequently imperfect. When the tube is too large, of course the registration is several degrees lower than it should be. Sometimes the tube is too small and then the mercury shoots up higher than it ought to. The tubes have to be seasoned. This takes several months. When glass is new it changes, expands, contracts, and warps almost as badly as green wood. Very often, after buying a cheap thermometer, the customer has brought it back and said it registered one hundred degrees in the shade, when the temperature was only ninety. The best thermometers are made in London. These imported thermometers, are, however, very expensive. Some very good ones are made in this country at New Lebanon, N. Y., and at Rochester."

"How are they made?" was asked.

"The tube is blown to the size wanted, the top being left open. The bulb is then heated to expel the air, and while heated the open end is inserted into some mercury. As the tube cools the mercury runs into the vacuum. The open end is then sealed and the tube placed on a scale. Then it is placed in water of a known temperature and the point to which the mercury rises is marked. Several tests like this are made before the instrument is offered for sale."

"How are the thermometers proved to be accurate?"

"There is a place at Harvard College for testing them. They are carefully examined at different temperatures, and any variation is marked. A certificate is given with every instrument that is examined."

"Which scale do you think is the best?"

"The centigrade is the one I think should be generally adopted. For the use of brewers there is a thermometer about three feet long with a bulb about two feet in length. The scale of this is short and is only marked for a few degrees above freezing point. Another odd instrument is of English make, and can be read in the dark. The tube is filled with green composition and contains phosphorus. Spirit thermometers are used for very cold climates, as mercury congeals at thirty degrees below zero. These cannot be used to measure extoeme heat, as above a certain temperature the liquid expands too fast; it boils at one hundred and sixty degrees. For very high temperatures the pyrometer takes the place of the thermometer. The heat is measured by the expansion of metals, and will accurately register up to seven hundred degrees. Febrile thermometers, for the use of physicians, are very carefully made, and a certificate is sold with them indicating their variations from perfect accuracy.

THE OTHER SIDE.

AN ADVOCATE OF ADULTERATION VENTILATES HIS VIEWS.

"Now, then," said a dealer, "let us look at the matter in another light. Is the adulteration—a better word for which would be reduction—of spices injurious to the health?

"Take pepper, for instance, and mustard also. Very few people would use pepper if they could buy it as cheap as the ordinary kinds sold, because it is too strong. It is reduced with buckwheat middlings, a very mild adulterant certainly, with some roasted cocoanut shell, which is perfectly harmless, thrown in for a coloring mixture. In the case of mustard the use of wheat flour is believed to be conducive to the health of the consumer, and the tumeric used for coloring is used in small quantities and cannot hurt any one.

"Almond and cocoanut shells, with mealy substances as the base, are used in the manufacture of most all spices. There is no greater profit to either the jobbing or retail trade in selling the adulterated goods; but the latter are kept and sold because of the demand for cheaper prices than could be made on the pure articles. Very likely, too, the reduced spices would be more sought for at the same price in many instances, if brought into competition with the strictly pure goods. It may be taken for granted that no reputable manufacturer will knowingly use any adulterants which are deleterious in their nature or injurious in the quantities used.

"In coffee there is less aduleration now than formerly, most of the trade being in the berry roasted and sold whole. The high prices prevailing just now for the cheaper coffees has caused some demand for the chicory and roasted pea compounds, which are sold, ground in bulk. The poorer class of private consumers only buy this kind of ground coffee at the stores. But the advance in price has caused a demand for chicory and peas among large restaurants, dispensing fragrant coffee at five cents a cup, and doubtless there are many persons who have learned to love the strength of chicory and have grown fond of the healthful pea, which contains 95 per cent. of nourishment, and is not as trying on the nerves as real strong pure coffee.

"The Germans in the Fatherland buy their chicory at the store just as they do their coffee, and do the mixing at home to suit themselves. I knew an old gentleman when I was in the trade some years ago who always called for that twelve-cent coffee, which he said he liked because it contained more peas than coffee."

In conclusion he stated that the whole subject of reduction or adulteration was one which was not fully understood by the public, and not always correctly stated by the press. The very word "adulteration" meant poison to many people, who labored under the delusion that they were being defrauded and endangered in health as a consequence of the improved and cheapened processes of manufacture in the line of food products. —*Chicago Inter-Ocean.*

SAUERKRAUT.

INTERESTING PROCESS OF MAKING A FAVORITE GERMAN DISH.

A very interesting and important part of sauerkrant making is the cutting of the cabbage, says the *St. Louis Republican.* As wine depends greatly on its age for flavor and quality, so does sauerkraut depend upon the manner in which the cabbage is cut. To be firm and crisp, yet tender, the cabbage must be cut in long, thin slices. To chop it up fine, as could be done much easier, would practically be to spoil it, or render its value much less. After experimenting for over five years a knife was invented which does the work in a most satisfactory manner. By means of a shaft in the centre it is made to revolve very rapidly, and eight knives slice the cabbage as neat as a butcher could a steak. The knife can cut meat, too, as some of the operators have found out to their sorrow. This wheel of knives is about thirty inches in diameter, and will cut from 50,000 to 60,000 pounds of cabbage in a day, depending on the skill and energy of the feeders. Four feeders work, although one can feed if desired. The head of the cabbage is still on the wheel, and the pressure of the hand causes it to disappear in a few seconds. Beneath the wheel is a V-shaped chest or box into which the cut cabbage falls. When it is full a big truck holding 400 pounds of cabbage is shoved under it, the right side of the chest is pulled back, and the cabbage falls into the truck. The

girls who cut the cores from the cabbage stand on a platform raised about three feet from the floor below the one on which the cabbage is unloaded. When one of the trucks is filled it is pushed along a gangway by two lusty young men, and into a big building 56x184 feet. This is called the packing house. Never having seen the vault of a brewery, I can't say it looks like one, although I judge it does. It is filled with huge tanks twenty feet in diameter, and ten feet deep. There are twenty-eight tanks in this building, and ten tanks in an adjoining building 32x96 feet in dimensions. Each tank holds 400 barrels of sauerkraut, worth nearly $4,000. Thus the thirty-eighty tanks, if only filled once a year, contain $193,000 worth of sauerkraut. In each tank are two big, strong men wearing long rubber boots. When a truckful of cabbage is dumped into the tank they tramp it down. The object of this is to break the fibre sufficiently to let out the water, so the salt, which is plentifully thrown over it, will take action at once. In other words, it is to facilitate fermentation. The sole ingredients of sauerkraut are cabbage and salt. Worms and insects might improve the flavor, but they are religiously excluded. It takes sauerkraut from two to four weeks to cure or ferment, depending on the temperature of the cabbage when put in, and the atmosphere afterward. It can be kept as long as desired, and, like wine, improves with age. But it is not kept in the tanks. After fermentation it is placed in barrels holding thirty-two gallons each, and headed up as tight as an oil-barrel. Then it is shipped in any quantity desired all over the country.

ARTIFICIAL BANANAS.

A GOOD ENOUGH STORY, BUT PROBABLY UNTRUE.

"Well, how do you like this?" said Electrician Weston, of Newark, to a *Herald* reporter, as he uncorked a bottle with an almost colorless liquid in it. The odor was like that of a plantation ripened banana—one of the kind that the San Domingo darkies like to cut "just at de full o' de moon"—the perfection of banana in short.

"Now, that is acetate of amyl," continued Mr. Weston, "and if all the banana plantations should give out, I could make a very fair imitation of bananas out of corn starch and that liquid."

"Holy smoke!" said the reporter. "I've heard of artificial eggs, and if you can make artificial bananas, I'll believe the egg story. What'll you make the skins of?"

"Oh! that's easy. Here is a substance that is tough and cheap, and it can be easily moulded into the proper shape. Then the corn starch filling can be poured in and the banana is ready for sale. This stuff for the skin is merely common cotton, saturated with sulphuric and nitric acid—gun cotton, in fact—dissolved in a mixture of ether and alcohol, and the solvent then evaporated. It becomes then a solid, resembling fine white horn, very tough, the toughest substance known. It can be shaved into sheets of the proper thickness and the banana peel color can easily be given."—*Newark Merchant.*

AN OPTICAL QUESTION.

THE ADVANTAGES OF READING FROM RIGHT TO LEFT.

There was no doubt a good reason for the practice of the Hebrews to read and to write from right to left. We have often speculated and inquired about it, and while we could not learn or discover anything very tangible in regard to it, we are quite convinced that the most pertinent reason lies in the fact that our vision from right to left is much clearer and stronger than it is from left to right. Naturally, so we are informed, there is no difference in nerves or in the optic arrangement of the human eye between the right or left eye, yet our own inquiries and observations show clearly that we are all, or most all, disposed, when we take an article of merchandise, or a picture, or anything else for examination into our hands, to look at it from right to left, and not from left to right. Since we have endeavored to fathom this question, we can see quite an advantage to the eye by reading from right to left. If we read from left to right, the parts read are yet continually before us; while, if reading from right to left, the parts read are then beyond our sight, and the parts to be read are unobstructed in view. Now, when we write from left to right, the line we are writing is rather of a delusion to the eye, while if we write from right to left nothing is immediately in front of our vision but a clear space. Even the pen and its shadow cease to exercise a less disturbing effect from right to left, while from left to right much annoyance is experienced by men who have much writing to do. Our observation shows that, unawares, people use their eyes from right to left whenever or wherever they go into close examination of anything, whatsoever that may be; just as they would naturally raise their right hand in order to get a clearer sense of feeling by touch.—*Hebrew Journal.*

A BUSINESS BENEFIT.

ADVANTAGES TO ADVERTISERS OFFERED BY THE AMERICAN ANALYST.

It has not the limitations of a daily paper. No one reads yesterday's paper. A monthly lives at least a month, while a semi-monthly is fresh twice a month, and its audience is not limited by geographical lines, but the circulation is all over the United States and Canada.

It contains matters of interest to everyone, especially the ladies of the household, and is, therefore, sure of a careful perusal. Our audiences are intelligent and of the better classes, who have money to spend, and any well worded advertisement in our columns, giving real information, will receive a careful perusal.

Our rates are as low as our circulation affords. Large circulation and original matter cost money, and those advertisers who desire to realize these benefits must expect to pay reasonably for them.

Advertisements in our columns are permanent. Most of our subscribers bind their numbers.

Our advertisements are set up in an attractive form, sure to call the attention of the reader.

Anything that our readers want, or for which a demand is to be created, not wholly of a local nature, will pay to advertise with us.

We take only advertisements from legitimate houses of really meritorious goods, and give them all the editorial assistance they deserve; consequently our readers knowing this, have confidence in advertisements contained in our columns.

The fact that we have the best and largest houses in every branch of trade advertising with us, and that they always renew as their seasons arrive, proves beyond a doubt that they have found the AMERICAN ANALYST a good advertising medium. Why should not you?

RATES OF ADVERTISING.

Agate measure, 14 lines per inch, 10¼ inches per column.

Six insertions (3 months), 15 cents per line.

Twelve insertions (6 months), 12½ cents per line.

Twenty-four insertions (1 year), 10 cents per line.

Single insertions, 35 cents per line.

All first-class advertising agencies take orders for us.

Address, AMERICAN ANALYST, 19 Park Place, New York City.

AN UNKNOWN SENSATION.—He—"Will it annoy you if I smoke?" She—"I don't know. I never saw a gentleman smoking in my presence."—*The Waterbury.*

1888. 1888.

THE

American ♦ Analyst.

VOLUME FOUR.

THE new Volume now beginning will contain, besides the various Departments which have given such universal satisfaction, several NEW FEATURES of great popular interest and value. Among these will be

EASY LESSONS IN VOLAPUK.

AN EXHAUSTIVE SERIAL TREATISE ON AMERICAN WINES.

FOOD ADULTERATION FROM A NATIONAL STANDPOINT.

THE LARD ADULTERATION QUESTION.

INVESTIGATION OF ALUM BAKING POWDERS.

INFORMATION FOR AMERICAN HOUSEWIVES.

And full discussions of a great variety of practical, economical subjects relating to the household and important to the housekeeper, such as can be found in no other journal in America.

— *SUBSCRIPTION, $1.00 PER YEAR.* —

ADDRESS:

AMERICAN ANALYST,

No. 19 Park Place,

NEW YORK.

ALUM BAKING POWDER.

THE STATE FOOD ADULTERATION ACT IN OPERATION.

The daily papers recently contained the following dispatch from Canton, N. Y., dated December 17:

"The trial of Moon and Akerill for selling adulterated baking powder, which has been before Judge Kellogg, for some days, was concluded this afternoon, by a verdict against both parties. The case attracted attention from being the first brought under the State food adulteration act, against dealers in alum baking powders. The indictment was for both selling baking powders that were inferior, adulterated and injurious to health, by reason of being made from alum, and for selling them under pretence that they were a wholesome cream of tartar article. The court held that baking powder was an article of food under the meaning of the law, and the jury found the defendants guilty upon all the charges. The result of the trial classes alum baking powders as an adulterated article of food, the sale of which is illegal. The baking powder the parties were selling was in bulk and known as 'Gillitt's,' of Chicago."

The question was not as to the salubrity of alum baking powders, but as to the fact that alum baking powder was sold for cream of tartar baking powder. The question of the entire condemnation of alum baking powder brings up the old disputed question, whether alum can be so used in baking powders that a wholesome baking powder can be made which will give leavening power without leaving unwholesome salts in the bread. On this subject much can be said, and the AMERICAN ANALYST will take a decisive stand.

OUR MISSION.

WHAT THE AMERICAN ANALYST IS DOING.

FIGHTING ADULTERATION.

The steadily growing favor which the AMERICAN ANALYST is constantly receiving at the hands of both the reading and the business public is the best evidence that could be afforded of the useful field of effort it occupies. It was the pioneer journal in this country to take up the fight against adulteration, and stands to-day, by public acknowledgment, the only competent exponent of the principles involved in that momentous struggle. To this end the realm of sophistication and fraud has been thoroughly explored, and its corruptions, as far as practicable, exposed to the public view. Charlatans, adulterators, and handlers of poisonous food have been summarily and uncompromisingly dealt with. Humbugs seeking to enrich themselves, through the sale of high-sounding specifics for human ailments, have been subjected to the crucial test of thorough chemical analysis of their goods, and where the latter, as too frequently occurred, proved to be utter frauds in name, composition, and pretended effects upon the system, the real facts have been placed before our readers in order to save the public from further unconscious imposition. The veil of chemical mystery in which tricksters of this kind ostentatiously envelop their processes of manufacture, protects them as yet from the criminal laws to which other confidence operators are held amenable, and the only method for counteracting their nefarious schemes is through public exposure by the newspaper press. In exposing this species of fraud, the AMERICAN ANALYST has conferred a benefit upon the community, to which the latter is giving grateful and substantial recognition.

SANITARY AND FOOD REFORMS.

In addition to the foregoing, the AMERICAN ANALYST is in constant co-operation with the Boards of Health of this and other cities, in efforts to secure sanitary and food reforms through organized methods, and while it is nobody's mouthpiece, it is conceded to be the only popular medium through which those bodies can bring their purposes and action intelligently before the general public. Reaching as it does all classes, manufacturers, merchants, physicians, chemists and private families all over the land, its influence is exerted over a vast radius, producing results as visibly marked as they are widespreading.

HOUSEHOLD MATTERS.

"The American Household," edited by Miss Juliet Corson, is a department of special interest to ladies. It is very different and far superior to the ordinary cook book in that it tells the housewife suggestively what to buy, what foods are in season, as well as how to prepare the many varieties of dishes, all in a practical way easily followed. Other matters of great interest to housewives are also discussed.

PRACTICAL DISCUSSIONS.

Numerous other interests are also faithfully represented in our columns, such as the regular series of articles entitled, "Some Every Day Suggestions," relating to common experiences of society, the question of hygiene, and an infinite variety of practical subjects. In short, the AMERICAN ANALYST always keeps abreast in giving the fullest information on all matters directly or indirectly in the line of its proper field.

VOLAPUK.

Among the striking features of this Fourth Volume will be a course of progressive lessons in the new Universal Language, Volapuk, so arranged as to enable our readers to readily instruct themselves in this commercial tongue. This series alone will be found to be worth several times the cost of a year's subscription.

SCIENTIFIC INVESTIGATIONS.

The business transacted in the office of the AMERICAN ANALYST does not by any means all come to the surface in the pages of the paper. Minute analyses of chemical compounds, careful assays of minerals, examinations of questionable oils or doubtful condiments, and the many subtle operations incident to laboratory work are constantly required of us by correspondents far and near, and the results in many cases are not publicly recorded. In this manner, the influence of the paper encompasses a vast radius, from every point of which we receive constant expressions of approval, verbally, and in more substantial shape.

ITS VALUE TO ADVERTISERS.

No person can scrutinize the advertising pages of this journal without being impressed with the uniform high character of the numerous houses who find our columns the most desirable—because the most effective—medium for advancing their interests throughout the country in the several directions to which they respectively pertain. The steady growth of our subscription lists, extending to every State in the Union, and in fact all over the world, affords another gratifying evidence of the approval given to our endeavors to sustain genuine manufactures, and to expose spurious, fraudulent, and harmful knavery.

SUBSCRIPTION $1 PER YEAR.

Considering the amount of practical information regularly embodied in its contents, together with the fact that the subscription price for an entire year is only one dollar we believe the day is approaching when the AMERICAN ANALYST will be regularly welcomed in every intelligent household in the land. Address,

ANALYST PUBLISHING CO.,
19 *Park Place, N. Y.*

THE FAITH HUMBUG.

DANGEROUS POSSIBILITIES OF A SILLY DELUSION.

"Christian Science," faith cure, or any other name these so-called healers take to themselves, has secured one victim in the person of Mrs. Margaret Kidder, of Chicago, who is at present an inmate of the County Insane Asylum. How much longer are the reputable physicians of this country going to allow these frauds to exist? There are Societies for the Prevention of Vice, Cruelty to Children, Cruelty to Animals, etc., etc., and why not a Society for the Prevention of Quacks and Harmful Remedies? The call for the latter is a strong one and growing every day. Something must be done and the something rests entirely with the physicians. The woman in question discharged her family physician, having heard of this Mrs. Anna Johnston, and put herself completely in her hands. The resulting cure by the treatment was acute dementia. Religion of an ecstatic form was not intended for everyone on the face of the globe, and there are some dispositions, Mrs. Kidder being an illustration, that are bound to give way under the excitement and strain. Mrs. Johnston says that she "wrestled grievously in the unfortunate lady's behalf and relieved her from pain." Evidently, the end proves that. The fact that she will be prosecuted for practicing without a diploma is not sufficiently satisfactory; it does not cover ground enough; relating to the particular case it will not prevent the grand army of quacks who have sprung up recently under all sorts of names from following their trade in any place they choose, as long as they have no accident occur to them. If such mummeries were based upon the least science they would be acceptable and perhaps valuable; but when there is a pretence to nothing but humbug it is time a movement was started for their complete suppression.—*The Doctor.*

THE ART OF DINING.

BRILLAT SAVARIN'S FUNDAMENTAL TRUTHS OF THE SCIENCE.

1. But for life the universe were nothing, and all that has life requires nourishment.
2. Animals feed, man eats; the man of sense and culture alone understands eating.
3. The fate of nations depends upon how they are fed.
4. Tell me what you eat, and I will tell you what you are.
5. In compelling man to eat that he may live, Nature gives appetite to invite him, and pleasure to reward him.
6. Good living is due to that action of the judgment by which the things which please our taste are preferred to all others.
7. The pleasures of the table are common to all ages and ranks, to all countries and times; they not only harmonize with all the other pleasures, but remain to console us for their loss.
8. It is only at table that a man never feels bored during the first hour.
9. The discovery of a new dish does more for the happiness of the human race than the discovery of a planet.
10. A drunkard knows not how to drink, and he who eats too much, or too quickly, knows not how to eat.
11. In eating, the order is from the more substantial to the lighter.
12. In drinking, the order is from the milder to that which is stronger and of finer flavor.
13. To maintain that a man must not change his wine is a heresy; the palate becomes cloyed, and, after three or four glasses, it is but a deadened sensation that even the best wine provokes.
14. A last course at dinner, wanting cheese, is like a pretty woman with only one eye.
15. Cookery is an art, but to roast requires genius.
16. In a cook, the most essential quality is punctuality; it should be also that of the guest.
17. It is a breach of politeness toward those guests who are punctual when they are kept long waiting for one who is late.
18. He who receives friends without himself bestowing some pains upon the repast prepared for them, does not deserve to have friends.
19. As the coffee after dinner is the special care of the lady of the house, so the host must see that the liquors are the choicest possible.
20. To receive anyone as our guest is to become responsible for his happiness during the whole of the time he is under our roof.

ADULTERATED CREAM OF TARTAR.—Impure cream of tartar is a substance commonly sold in Canada. Out of about thirty-five samples recently examined by the public analysts, we understand some twenty-two only were genuine; the others were adulterated with gypsum, alum, acid phosphates and starch to the extent of from 15 to 80 per cent. Cream of tartar is a substance in very common domestic use, and two at least of the adulterants found would be decidedly injurious if taken into the human stomach, and whoever would so add such ingredients would poison a fellow creature at any time for a small "consideration" if it could be "safely" done, or legal proceedings evaded.—*Canada Health Journal.*

A SUBSTITUTE FOR CREMATION.

A POST MORTEM SAFE DEPOSIT PROPOSITION.

Another answer to the question of how best to dispose of the dead has been given by J. G. Meyers, of Washington. He has invented a plan which he believes to be superior to cremation, burial, or any other ancient or modern method of treating dead bodies. The new "Mausoleum and Safe Deposit for the Dead" is the name of this new contrivance. Mr. Meyers' plan may be regarded as a compromise between the two extremes of interment and cremation. In a fireproof building spaces will be provided just large enough for a single coffin. When a coffin with a dead body is placed in one of these, the door of the apartment is hermetically sealed. Running from these apartments are tubes which bring air into the dead-rooms and also carry it downward by a forced draft to a central furnace below, where are consumed all gases and fluids escaping from the bodies. Dead bodies treated in this manner will, in a short time, it is claimed, become naturally preserved or dried, and so remain. Ample provision will be made to prevent the entombing of persons not really dead. A receiving room will be provided with an electrical apparatus so arranged that the slightest movement in the coffin will set off an alarm. This will continue for hours, if need be, and will also move an indicator, which will draw attention to the place where the movement occurred. If, again, for any reason the removal of the dead should be desired, the bodies in the mausoleum, unlike those in gloomy pyramids of Gizeh, are always accessible and in such a state of preservation as to make a transfer practicable and comparatively easy. Arrangements will also be made for embalming bodies and for entombing those treated in this way that they may be seen at any time by friends. By the adoption of this system, Mr. Meyers maintains, body snatching will be made impossible. There will be but a single entrance to the building, guarded day and night. Yet, notwithstanding all these appointments, the cost of entombing in the mausoleum will not exceed that of a respectable interment in Greenwood, Laurel Hill, or any other well known cemetery. Families could be accommodated with sections, including as many single apartments as desired. The fronts of these spaces can be adorned as elaborately as a tombstone and with fully as great variety of ornamentation. An ordinary mausoleum could be placed within the limits of a city as well as on cemetery grounds, and be far less objectionable if built and managed as proposed, than the average brewery or sugar refinery. So favorably has Mr. Meyers' plan been received that already preparations are being made to introduce it throughout the country.

BEFORE IT IS BORN.

SOME STARTLING STATEMENTS OF GENERAL INTEREST.

Dr. Oliver Wendall Holmes, on being asked when the training of a child should begin, replied: "A hundred years before it is born."

Are we to infer from this that this generation is responsible for the condition of the race a hundred years from now?

Is this wonderful generation the natural result of the proper diet and medicines of a hundred years ago?

It is conceded in other lands that most of the wonderful discoveries of the world in this century have come from this country. Our ancestors were reared in log cabins, and suffered hardships and trials.

But they lived and enjoyed health to a ripe old age. The women of those days would endure hardship without apparent fatigue that would startle those of the present age.

Why was it?

One of the proprietors of the popular remedy known as Warner's safe cure, has been faithfully investigating the cause, and has called to his aid scientists as well as medical men, impressing upon them the fact that there cannot be an effect without a cause. This investigation disclosed the fact that in the olden times simple remedies were administered, compounded of herbs and roots, which were gathered and stored in the lofts of the log cabins, and when sickness came on, these remedies from nature's laboratory, were used with the best effects.

What were these remedies? What were they used for? After untiring and diligent search they have obtained the formulas so generally used for various disorders.

Now the question is, how will the olden time preparations affect the people of this age, who have been treated, under modern medical schools and codes, with poisonous and injurious drugs. This test has been carefully pursued, until they are convinced that the preparations they now call Warner's Log Cabin Remedies are what our much abused systems require.

Among them is what is known as Warner's Log Cabin Sarsaparilla, and they frankly announce that they do not consider the Sarsaparilla of so much value in itself as it is in the combination of the various ingredients which together work marvelously upon the system. They also have preparations for other diseases, such as "Warner's Log Cabin Cough and Consumption Remedy," "Log Cabin Hops and Buchu Remedy," "Warner's Log Cabin Scalpine" for the hair. They have great confidence that they have a cure for the common disease of catarrh, which they give the name of "Log Cabin Rose Cream." Also a "Log Cabin Plaster," which they are confident will supplant all others, and a Liver Pill, to be used separately or in connection with the other remedies.

We hope that the public will not be disappointed in these remedies but will reap a benefit from the investigations, and that the proprietors will not be embarrassed in their introduction by dealers trying to substitute remedies that have been so familiar to the shelves of our druggists. This line of remedies will be used instead of others. Insist upon your druggist getting them for you if he has't them yet in stock, and we feel confident that these new remedies will receive approbation at our readers' hands, as the founders have used every care in their preparation.

CONSERVATIVE.—"Don't you want a few signs, 'Honesty is the best policy' hung on your wall?" said a man who had such signs for sale, to the grocer; "there's money in 'em."

"Nop, I guess not," replied the grocer; "I've been doin' business on this corner fer 10 years in a stiddy, conservative sort o' way, an' I don't b'lieve in makin' any new fangled departures."—*Tid Bits.*

A LARGE BOILER.—The Dickson Manufacturing Company of Scranton, Pa., has just completed the largest boiler ever constructed in America. It is to be used in the Calumet and Hecla copper mines. The boiler is the tenth one purchased by the company during the present year. It is 35 feet 4 inches in length, 10 feet 6 inches wide, and 11 feet 6 inches high. It would require one man 1,200 days to build the boiler. It weighs 45 tons, and is of 1,000-horse power. There are 198 three-inch tubes in the boiler, a double fire box connecting with the flues, and stay bolts and rivets are used varying in length from 6 inches to 16 inches. There are thirty "hand holes" for the purpose of cleaning the boiler.

A celebrated physician has remarked that every house ought to be pulled down at the end of the sixtieth year, as it has by that time absorbed all the diseases of those who have lived in it, believing that wood and plaster absorb gases, foul air and feverish exhalations as readily as milk or water does. But as it is not practicable to tear down houses every half century or so, it is to be considered if all the wood used in their interior construction and all the plain surfaces of plaster should not be so thoroughly oiled or varnished that the power of absorption should be almost entirely destroyed and the character thus so changed, that destruction would no longer be desirable.

TAKE CARE OF THE HAIR.

The carelessness displayed by people, and especially by Americans, toward the hair is to be deplored. It is deplored by the guilty ones when they begin to pay the penalty of their thoughtlessness and neglect. Nothing is more opposed to neatness and cleanliness than a scalp which rains dandruff and loose hairs upon the neck and shoulders of the owner. Nothing is more disagreeable than a head whose surface is irritated and sore. And nothing is so unæsthetic as a half bald or entirely bare head. Yet these are but a few of the consequences which flow from the negligence mentioned.

It is so easy to keep the hair in good order and condition and to preserve the health and activity of the scalp, that neglect under the circumstances seems inexcusable. The same rules apply to men and women, adults and children alike. In the first place the head should be regularly shampooed, but not too often. The shampoo is misunderstood and misapplied, frequently doing far more harm than good. To do it properly, use lukewarm water. Cold water causes the scalp to shrink and prevent the removal of all the dirt. Hot water excites the glands and causes an abnormal flow and loss of natural oil. As the detergent, employ a saltspoonful of powdered borax and a teaspoonful of ammonia to a quart of water, or, what is better, use a superfine toilet soap, whether French, English or American, it matters not. With this, wash the hair and scalp thoroughly, but with only moderate pressure. Do not use the nails. They too often cut the delicate scalp and produce scratches and sores. Then rinse the head with lukewarm water, using a large bathing sponge, if convenient, until the liquid runs off the head perfectly clean and clear. Then dry the hair and scalp with a Turkish or other soft towel. Do not rub too hard or too fast. The former may abrade the surface and often forces lympth and blood through the skin; the latter heats the superficial tissues inordinately and weakens the hair at the roots. When thoroughly dried, the hair will be fluffy, dry, elastic and crisp, and the scalp clean, warm and pink.

If the hair is split at the ends, cut it off with sharp scissors just above where the cleaving begins. Then rub the head with the finger tips, and not the nails, until a pleasant glow is felt all around. Next and most important, use Ayer's Hair Vigor, the best capillary aid and dressing extant. Take a moderate quantity and rub it carefully into the roots of the hair and the pores of the scalp. The pure vegetable oil it contains softens the latter and makes the former smooth, silky and lustrous. The wine-spirit, a second ingredient, exerts the same benignant influence as the best Jamaica Bay Rum and tones up the pores and minute glands of the head; while the other ingredients, mild rubefacients, stimulate the other superficial tissues and increase the vitality of follicles in which the hairs grow. Do not use too much, as the excess makes the hair a trifle too glossy to be natural; nor, on the other hand, too little, as one part of the head will then be bright and lustrous and another dull and dry. Then rub the head lightly with the towel to absorb any loose Vigor that may have inadvertently been put on some spot in excess. Then brush with a soft or medium hard brush and with a comb whose tines are round pointed. A hard brush or a cheap common comb cuts the scalp and injure the hair. Do not shampoo more than once a week. Use the Ayer's Hair Vigor every day. A very slight amount applied each morning will compensate for what is absorbed by the skin or otherwise lost during the twenty-four hours.

Following these simple instructions will keep the scalp clean and fresh and the hair beautiful and healthy. It will prevent and cure dandruff, loose or falling hair, split ends, inflamed follicles and devitalized glands and cells. The time required is practically nothing, the labor a trifle and the results so admirable and beautiful as to recommend themselves to all.

INDUSTRIAL NOTES.

Colgan's "Taffy Tolu" is the original and only genuine. It is made by thorough druggists, who recommend it upon physiological principles as an aid to digestion.

CATARRH CURED.

A clergyman, after years of suffering from that loathsome disease, catarrh, and vainly trying every known remedy, at last found a prescription which completely cured and saved him from death. Any sufferer from this dreadful disease sending a self-addressed stamped envelope to Prof. J. A. Lawrence, 212 East 9th Street, New York, will receive the recipe free of charge.

PHOSPHATIC FOOD.

A feature of the economy of nature is the uniform and persistent distribution of the food-elements necessary to animal life. This law of supply extends to the least familiar factors of the physical organization. Thus nothing is more vital, though less spoken of, than calcic phosphate. It makes the basis of the bones and teeth; it enters into the composition of brains, nerves, hair and nails. It even floats in the blood. The lower animals supply it to the higher. In them it constitutes a portion of the shell, carapace, horn, sword, scales and tendons. In the still lower organisms it is a part of spiculæ and osseous centres. If the invisible forms of life are considered, even these are found to contain an appreciable amount of the all important compound. Animals derive their nourishment from the vegetable world. While calcic phosphate does not seem from a chemical standpoint to be necessary to plant growth, yet it is an absolute necessity from a practical or agricultural point of view. The tree extracts it from the soil by its minute rootlets and tubers. The sea weed and sea moss obtain it from the land and the water, and the plant life of the ocean slowly gathers it from the element wherein it has its being. With this vast mechanism at work unceasingly it would seem as if every want had been provided for in a perfect manner. Nature goes further and it makes what may be termed relays in every corner. Among the rocks she accumulates millions of tons of the phosphate in the form of apalite or of green sands and marl or of guano, and so prevents any conceivable exhaustion of the supply. In the utilization of these phosphates, nature has but one choice, to use them as they come. Only by the slow process of disintegration, decay, dissolution and reabsorption does she transfer it from its primitive to its secondary and more beneficial stage. Man, assisted by art and science, has methods numberless of making the same transformation in a few hours. Of the many systems employed the best and most advantageous is that which selects fine bone ash as the raw material mixed with sulphuric acid made from pure sulphur and not from pyrites, and so produces the pure acid phosphate of lime of commerce. Thus made, it is a clean white uniform phosphate adapted to every use and which, for culinary and remedial purposes is, of the highest value.

Of the many kinds made by the manufacturers of the world, the best is that produced by the United States Chemical Company of Philadelphia. They use a well selected and thoroughly calcined bone ash with oil of vitriol, made on their own premises from imported sulphur, and succeed in obtaining an article which for purity, homogeneity and excellence stands at the head of the chemical manufactures of the country.

DEEP SEA WONDERS

exist in thousands of forms, but are surpassed by the marvels of invention. Those who are in need of profitable work that can be done while living at home should at once send their address to Hallett & Co., Portland, Maine, and receive free, full information how either sex, of all ages, can earn from $5 to $25 per day and upwards, wherever they live. You are started free. Capital not required. Some have made over $50 in a single day at this work. All succeed.

ESSENTIAL TO HEALTH.

The value of the phosphate of lime to the human system is everywhere acknowledged by the highest scientific authorities. This substance is found in wheat and other cereals, and constitutes the vital or nutritive element therein. Indeed, it may be truly said to be the essential and vitalizing constituent of all grains. If grains are deprived of their phosphates their life sustaining properties are withdrawn in the same proportion. It is a well-known fact that fine white flour is deprived of a large portion of the phosphates in the process of bolting, and that such flour alone will not sustain life. It was a happy idea of Prof. Horsford to restore life sustaining substances through the medium of baking powder, and his famous preparation has proved one of the most useful gifts which science has made to mankind. It contains the nutritious and strength giving phosphates, and its use is positively beneficial to health. It makes biscuit, bread, gems, rolls and other articles that are far more light, white and wholesome, than it is possible to produce by any other process. The virtues possessed by this preparation should commend it to all careful and economical housekeepers. In a report on the relative value of the various baking powders, Prof. Chas. A. Doremus, of the Bellevue Hospital Medical College, says: "Unless a phosphate form one of the ingredients of a baking powder, there is no residue left of nutritive value."

CIDER.

An interview with Mr. C. I. Rogers, of the firm of T. P. Rogers & Son, cider makers, 370-376 Washington St., N. Y., enables us to give some more information on this interesting subject. This season has been a good one for cider, and though apples generally have suffered from worms and fungus, a little extra care has enabled cider makers to pick out the best apples for their use. The fruit considered best for cider are the little golden russett and the Newtown pippin. Next to these, a natural apple, which has been neither budded nor grafted, is considered excellent because not so saccharine. Generally speaking, a good eating apple does not give the best cider. When the fruit is picked it is customary to lay it out on a flat surface, two or three apples thick, to "sweat," that is to allow some of its moisture to evaporate and thus mellow the apples. Then they are ground and pressed. The juice thus expressed may be divided into three portions, the first and third portions expressed not being as desirable for good cider as the middle third, or as it is technically called, the heart of the cheese. The next process is fermentation, which cleanses the cider of nearly all its impurities. The slower this proceeds the better will be the results. Temperature is the important agent in this, and this of course depends very much upon the state of the weather, a long continuing humid atmosphere being considered very unfavorable. The fermentation must pass through the saccharine and just to the commencement of the acetic stage. The practical knowledge required for the proper manipulation of cider through this process only experience will teach. The main object being to cleanse the juice of impurities, it will be seen that the use of all agencies to stop fermentation short of this is fatal to obtaining the best results. Cleanliness in everything is a vital matter in cider making as in everything else. The only competition feared by a house making a fine product is that from rascally makers who make an inferior article which they palm off as the best at a lower price. In cider, also, the rule so often laid down by the AMERICAN ANALYST holds good, buy the product bearing the name of a reputable maker on the package and do not buy in bulk. Large quantities of American cider having a good reputation are annually shipped to Europe. The cider sold in gallon kegs is simply sweet cider uncleansed and unfermented. Owing to the law of 1879, allowing vinegar makers to make their own spirit, the vinegar business has ceased to be profitable for cider makers.

For writing a letter, signing a check, posting a ledger, drawing up a will or dashing off an editorial, an Esterbrook's pen is equally serviceable

Warner's Log Cabin Remedies—old fashioned, simple compounds, used in the days of our hardy forefathers, are "old timers" but "old reliable." They comprise a "Sarsaparilla," "Hops and Buchu Remedy," "Cough and Consumption Remedy," "Scalpine, for the Hair," "Extract," for external and internal use, "Plasters," "Rose Cream," for catarrh, and "Liver Pills." They are put up by H. H. Warner & Co., proprietors of Warner's Safe Remedies, and promise to equal the standard value of those great preparations. All druggists keep them.

Colgan's "Taffy Tolu" is an indispensable toilet requisite. It keeps the mouth clean and healthy, preserves the teeth, promotes digestion, and gives fragrance to the breath.

BURNETT'S COFFEE CLEARER

Is a woman's invention. A patented combination of codfish skin and white of eggs. The best article for settling coffee, saving eggs and the use of patent coffee pots. At a daily expense of less than (½) one-half a cent per family. This is a superior article for settling coffee, meeting with great success, and highly commended by the best housekeepers. When the Coffee Clearer is used, less coffee is required to give the same strength than when settled by eggs or distilled. When coffee is made by the French method, the Clearer is equally successful, giving a brilliant and sparkling appearance to the coffee. Made by Joseph Burnett & Co., Boston, which is a sufficient guaranty of its qualities.

PECK'S EAR DRUMS.

A correspondent asks: "Where can we send to get Peck's Patent Ear Drums, an invention for enabling people to hear, who are deaf, slightly or otherwise?" Write to F. Hiscox, 853 Broadway, N. Y., stating cause and particulars of your deafness, and he will give you all the points desired. Read the following from the *Surgical Record:* "A lecturer in one of our hospitals, while illustrating progress in medical science, introduced a deaf patient whose case baffled all medical skill and was considered hopeless. But an invention belonging to F. Hiscox, New York, having been recommended, it was used with very satisfactory results, as it fully restored the hearing. It was tested in other cases and found to be more successful than any known device for the relief of deafness, as hearing lost for many years was fully restored by it. This invention is all the more satisfactory as it is out of sight and does not require to be held in position. And, while it can be readily removed or inserted by the patients themselves, it is withal curative in action and comfortable to wear."

Viburnum Compound relieves, calms, soothes, without narcotizing or stupifying, and never lays the foundation for the dreadful opium, morphine or chloral habit, as it contains none of these agents.

A NEW NOTION.—The latest novelty in the decoration of the dinner-table is to have groups of miniature animals of every kind placed here and there among the flowers. Cats, kittens, monkeys, pigs, donkeys, elephants, puppies, all mixed together, and all very much of a size, look quaint and amusing, and form a useful topic of conversation for those who find it difficult to originate subjects for themselves.

BRAINS VS. MACHINERY.—First New Yorker—Who is that shabby-looking man you just bowed to?

Second New Yorker—Oh, that's an author who stuck to pure literature—said he would starve before he would write down to the masses.

"Ah, too bad! And who is that gorgeous-looking swell who is crossing the street?"

"That is the soap and arsenic poet—writes most of the rhyming advertisements that you see in the papers."

BRIGHT BRASS.—Highly polished brass may be kept absolutely bright and free from tarnish by thinly coating the articles with a varnish of bleached shellac and alcohol.

RHEUMATISM

is a blood disease and *Corey's Mexican Remedy a positive cure.* Purely vegetable. Not a case of failure known. So strong is our faith, we will send one bottle to any sufferer *free.* Address

THE IDEAL MEDICINE CO., 19 Park Place, New York City.

HAND SEWED SHOES.

MYERS & BARRY.

HAND SEWED SHOES, ... **$3 50**
TO ORDER, ... **$4 00**

All grades of French Calf constantly on hand.

123 Roosevelt St. (near the Ferry),
New York.

10 CENTS (silver) pays for your address in **THE INVESTIGATOR'S Agents' Directory,** which goes direct to manufacturers, importers, dealers and publishers all over the United States, from whom you will get hundreds of samples, circulars, books, newspapers, magazines, &c., from those who want agents. You will get lots of mail matter and good reading free, and be well pleased with the small investment. List containing name sent to each person answering this advertisement. **THE INVESTIGATOR CO., 3 East 14th Street, New York. Box 180.**

A VALUABLE BOOK FOR NOTHING.

The AMERICAN ANALYST will send to any person who will forward a New Subscription with One Dollar, a copy of

THE FAMILY CYCLOPÆDIA OF USEFUL KNOWLEDGE.



This is unquestionably one of the most interesting, entertaining and instructive books ever published. It is a universal educator for every member of the family circle, filled with useful information from beginning to end, and this information is given in such an attractive and pleasing way that the book is quite as entertaining as it is instructive. It treats of hundreds of subjects of which no man, woman or child who seeks to be well informed can afford to be ignorant, yet of which the masses of people are entirely unlearned. It contains the cream or substance of a dozen ordinary volumes, and is one of the most valuable and useful books a family can have in the house. No living man is so well informed that he may not learn from it. It is a book for the masses, for old and young, rich and poor, and will be read with pleasure and profit by all. It will likewise be found of great value as a work of reference. The book is profusely and elegantly illustrated, and is conveniently divided into departments, as follows: **Biography, History, Natural History, Travels, Manners and Customs, Etc.; The World Illustrated, Useful Arts and Manufactures, Trees, Plants, Fruits, Etc.; Great Inventions, Mining, Wonders of the Sea, Familiar Science, Law for the Masses, Statistical and Miscellaneous.** All the above subjects are fully and ably treated in this valuable book. It is a vast storehouse of useful and entertaining knowledge—unquestionably one of the best and most valuable books ever published in any land or language. No cyclopædia ever heretofore published at twice the cost is to be compared with this book in point of artistic make-up, beauty, and excellence of illustration, and quality of contents. As a holiday or birthday present for any one, nothing more appropriate or acceptable could possibly be selected. THE FAMILY CYCLOPÆDIA OF USEFUL KNOWLEDGE is a large and handsome book of 544 pages, 12mo, printed upon fine paper and elegantly bound in cloth, embellished with artistic designs in black and gold. It contains **Two Hundred and Seventy-three Beautiful Illustrations,** the original cost of which was over $5,000. The book will be sent by mail, post-paid, to any person sending a **New Subscription with One Dollar.** It is as large and handsomely gotten up as books usually sold at $1.50 and $2.00, and in the quality of its contents is worth a dozen ordinary volumes.

ADDRESS ANALYST PUBLISHING CO.,

——19 PARK PLACE, NEW YORK.——

QUINA-LAROCHE

A STIMULATING, RESTORATIVE AND ANTI-FEBRILE

VINOUS ELIXIR

OF THE THREE CINCHONA BARKS.

A most powerful restorative in all cases where Cinchona is indicated,

As MALARIA, EXHAUSTION, SLOW CONVALESCENCE, GENERAL DEBILITY, Etc.

LAROCHE'S QUINA possesses in the highest degree the restorative and invigorating qualities of Cinchona which is the best known medicine for giving tone to the digestive organs. It succeeds completely in removing LANGUOR, WEAKNESS, WASTING DISEASES, WANT OF APPETITE, and for FEVER AND AGUE IT IS ONE OF THE BEST SPECIFICS.

FOR SALE BY ALL DRUGGISTS.

E. FOUGERA & CO.,

PARIS, 22 RUE DROUOT. Sole Agents for the United States.



SCALDS and BURNS should have prompt and proper care or they may prove very dangerous and perhaps FATAL.



ACCIDENTS are constantly happening.



A kick of a horse or cow may cause a bad bruise; the slip of an axe or knife may result in a serious cut.



Any of these things may happen to one of YOUR family at any moment.

Have you a bottle of PERRY DAVIS' PAIN KILLER ready for use in such cases?

It has no equal for the cure of scalds, burns, cuts, swellings, bruises, sprains, sores, insect bites &c.—All Druggists sell it.

PERRY DAVIS & SON. PROVIDENCE R. I.

THE LESLIE E. KEELEY CO.



DWIGHT, ILLINOIS.

We solicit an investigation of our system and methods and will gladly send to any one, very interesting reading matter on the OPIUM HABIT, DRUNKENNESS and their effects and cure. Physicians specially invited to examine, and if desirous of trying our remedies, liberal arrangements will be made with them. Prompt and frank attention to correspondence. The remedies are put up safely in stout boxes and sent masked. Full directions sent.

THE LESLIE E. KEELEY CO.,

Dwight, Illinois.

SYNTHETIC GLUCOSE.

DISCOVERY OF A METHOD FOR ITS SYNTHETICAL MANUFACTURE.

Another important acquisition to our store of knowledge has recently been made, says *Nature*. Glucose, commonly called grape-sugar, has been artificially prepared by Drs. Emil Fisher and Julius Tafel in the chemical laboratory of the University of Würzburg. This happy achievement, which is announced in the number of the *Berichte* just received, is one which has long been looked forward to, and which cannot fail to give deep satisfaction in chemical circles all over the world. As is generally the case in syntheses of this description, not only has the sugar itself been actually prepared, but, what is at least quite as important, considerable light has been thrown upon that much-discussed question, the constitution of sugars. A most remarkable, and yet only to be expected, attribute of this artificial sugar is that it is found to be entirely incapable of rotating a beam of polarized light. As is well known, there are several naturally occurring varieties of glucose, all of which may be expressed by the same empirical constitution, and all possessing the power of rotating the plane of polarization; dextrose, or grape-sugar, the best known of these varieties, as its name implies, deviates the plane of polarization to the right, as do several other less important varieties; while lævulose, or fruit-sugar, rotates the plane to the left. But in artificially preparing a glucose there is just as much tendency for one kind to be formed as another, and the probability is that both dextro and lævo are simultaneously formed, and thus neutralize each other, producing a totally inactive mixture. It may be that, as in the case of racemic acid, the two kinds are formed side by side, and neutralize each other in the solution; or it may even be, that, as is the case with truly inactive tartaric acid, there is a true neutralization within the molecule itself. Which of these hypotheses is correct is a question for further work to decide.

PITTSBURG INDUSTRIES.—There are twenty blast furnaces in and about Pittsburg, thirty-five rolling mills, thirty-nine steel works, fifteen window-glass works, thirty-seven flint-glass works, and eleven green-glass works. The blast furnaces make 900,000 tons of iron per year, the rolling mills 575,000 tons, steel works 750,000 tons, plate glass works 3,250,000 square feet, window glass works 900,000.

AN EXTRAORDINARY OFFER!

1000 $2.00 Corn Shellers, Absolutely Free to the first 1,000 Subscribers. 50 Cent Sewing Machine Relief Springs, Absolutely Free to the second 1,000 Subscribers enclosing this advertisement.

The Giant of the Family Monthlies.

THE INVESTIGATOR.

A Journal of Practical Information.

Only Fifty Cents per year, including valuable premium. Five Cents per copy. None Free.

Beautifully Illustrated and Printed.
A Complete Story in Each Issue

Edited and written by practical men and women, the foremost in their specialties in America.

The Investigator's Practical Departments.

Frauds and Humbugs, Counterfeiters, Chemist, Manufacturer, Inventor, Cook, Housekeeper, Agriculturist, Lawyer, Photographer, Mechanic, Artist, Antiquarian, Numismatist, Philatelist, Fashions, Etiquette, Amusements, Exchanges, Correspondents, Physician, Confectioner, etc., etc.

THE INVESTIGATOR will contain the cream of a thousand standard works, the late revelations of genius and experience, the embodied wisdom of practical and successful men and women of the past and present.

THE INVESTIGATOR FREE.

If you subscribe to one or more journals, send your subscriptions direct to us, and we will include THE INVESTIGATOR without extra charge.

$10,000 IN PREMIUMS.

Absolutely Free to Club Raisers: Pianos, Organs, Sewing Machines, Gold and Silver Watches, Diamond Rings and other Jewelry. Gold Pens and Pencils, Fountain Pens, Albums, Printing Presses, Type Writers, etc., etc.

Address all communications, and make all money orders payable to

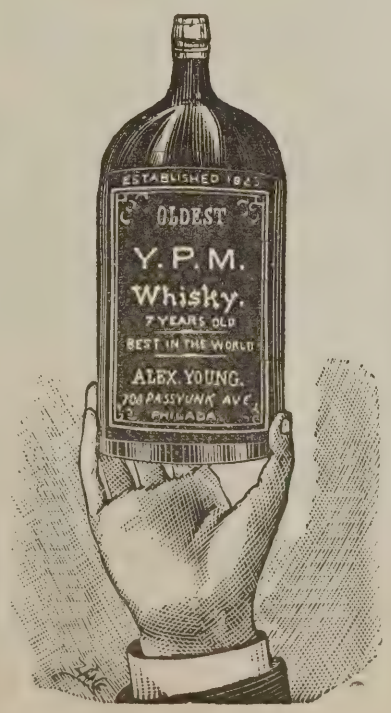
THE INVESTIGATOR COMPANY,
2 East 14th St., Box 180,
Cor. Fifth Avenue. NEW YORK.



BLAIR'S PILLS

Great English Remedy for Gout, Rheumatism and Kidney Complaints.

Sure, Prompt and Effective. Oval box 34, round box 14 pills. At all druggists, and 224 William St., New York



ESTABLISHED 1823.

ALEX. YOUNG CO., Limited.

DISTILLERS OF

Y. P. M. WHISKIES

DISTILLERY,

Nos. 408, 410, 412 and 414 South Street,

MALT HOUSE,

416, 418, 420, 422 and 424 South Street,

STORE,

No. 700 Passyunk Avenue.

PHILADELPHIA, PA.



Its superior excellence proven in millions of homes for more than a quarter of a century. It is used by the United States Government. Endorsed by the heads of the Great Universities as the Strongest, Purest, and most Healthful. Dr. Price's the only Baking Powder that does not contain Ammonia, Lime or Alum. Sold only in cans.

PRICE BAKING POWDER CO.
NEW YORK. CHICAGO, ST. LOUIS.

BUSINESS, PROFESSIONS, BUYERS AND SELLERS WANT

CHALLEN. 150 LABOR SAVING BOOKS NASSAU NEW YORK.

All kinds on hand or to order. Books published on Author's account and profit. 30 years' experience.



These Goods are "Par Excellence,"

Pure, Healthful and Reliable, warranted to give satisfaction in every particular. For sale by wholesale and retail grocers throughout the United States. VOLWIE BROS., Manufacturers CLEVELAND and CHICAGO.

AGE PURITY STRENGTH

The "Best" Tonic

A Concentrated Liquid Extract

OF

MALT AND HOPS.

Invigorating

and

Nutritious.



INSURES

A

Healthy Appetite

—AND—

AIDS DIGESTION.

STRENGTHENS THE SYSTEM.

One of the Most Efficacious Remedies for Dyspepsia.

INDISPENSABLE FOR NURSING MOTHERS. THE MOST WHOLESOME TABLE BEVERAGE.

The "BEST" Tonic is manufactured from the Best Malt and Choicest Hops and neither Alcohol, Spirits nor Chemicals of any kind are used in its preparation.

MANUFACTURED ONLY BY

Specialty Department, **PHILLIP BEST BREWING CO.,**

Eastern Depot, 28 College Place, N. Y.

General Office, - - - - MILWAUKEE, WIS.

J. HENRY HENTZ. J. P. ROBINETT. J. HENRY HENTZ, Jr.

ESTABLISHED 1793.

WHITE, HENTZ & CO.,

SOLE PROPRIETORS OF

Trimble and Pennsylvania Monogram Whiskies.

222 and 224 NORTH SECOND ST., PHILADELPHIA.

D. LIEBER, 17 South William St., New York. Col. H. A. SELIGSON, 1200 Pennsylvania Ave., Washington, D. C.

THE LABORATORY.

To Inventors, Manufacturers and Applicants for Patents.

The AMERICAN ANALYST may be consulted upon all matters involving theoretical or applied chemistry. Advice and opinions given. Analyses and assays made. Patents perfected and secured. Terms reasonable.

Address, AMERICAN ANALYST,
19 Park Place, N. Y.

CHEAP QUININE.—The price of quinine has been reduced from $5.00 an ounce to less than $1.00, and a dealer says that it will remain cheap hereafter. The reason is that the chinchona trees are destroyed in taking off the bark. Formerly the bark was stripped clean and the trees were left naked to bleed to death. Now, when the bark is removed, the trees are swathed with moss, new bark forms on them, and instead of living to bear one crop of bark they yield their bark yearly.

RECLAIMING THE DESERT.—With the aid of science even the Desert of the Sahara, is becoming inhabitable, and colonization is encouraged. The Lower Sahara is an immense basin of artesian waters, and the French are forming fresh oases with skill and success, so that the number of cultivated tracks is increasing rapidly. After a period of thirty years forty-three oases have 13,000 inhabitants, 120,000 trees between one and seven years old, and 100,000 fruit trees.

FROG SPITTLE.—The frothy substance which is often found on grass, and popularly known as "frog spittle," has no connection with that animal. It is caused by a little insect which secretes a viscid, transparent fluid, with which he is completely covered. To enable him to breathe, he reaches out a pair of legs, and, enclosing a little bubble of air, brings it down, and afterward allows it to escape into the liquid. After a while the numerous bubbles convert it completely into froth, or a substance resembling saliva.—*Archives of Dentistry.*

Admitted by travelers to be the finest in the world.

THE IMPROVED

Russian and Turkish Baths,

18 LAFAYETTE PLACE,

Hours, 7 A. M. to 10 P. M. NEW YORK.

GENTLEMEN ONLY.

Gluten Flour and Special Diabetic Food are invaluable waste repairing Flours, for Dyspepsia, Diabetes, Debility, and Children's Food. No Bran, mainly free from Starch. Six lbs. free to physicians and clergymen who will pay express charges. For all family uses nothing equals our "Health Flour." Try it. Samples free. Send for circulars to FARWELL & RHINES, Watertown, N. Y.

PETROLINA

Named Petrolatum by the Pharmacopœia.

Non-oxidizable, Unchangeable, Affected by neither Time nor Temperature.

COLOR LIGHT STRAW; MELTING POINT, 115° F. TRADE SUPPLIED BY JOBBERS.

PLAIN,
POMADE,
SCALPENE,
CARBOLATED,
CAMPHORATED,
ARNICATED,
COLD CREAM,
CAMPHOR ICE, COSMETIC,
PETROLINA OIL,
HOOF OINTMENT,
VETERINARY.



ALWAYS PURE,
SWEET,
NEUTRAL
AND
UNIFORM.

For Medicinal, Pharmaceutical and Toilet Purposes there is nothing on the market as good, as pure, or as handsomely and conveniently packed as

PETROLINA.

Please remember that an article suitable for the most delicate pharmaceutical preparations can not be made as cheaply as "axle grease;" that there are Petroleum Jellies and Petroleum Jellies, and that **PETROLINA** heads the list in all that pertains to a perfect article.

Order the goods, either in bulk or preparations, of your wholesale druggist. If he does not have them, write to our office.

THE BINGHAMTON OIL REFINING CO.

New York Office, 80 Cortlandt Street. BINGHAMTON, N. Y.

CUM HOC SIGNO  COGNITUS EST

LIQUID

PANCREOPEPSINE

(WARNER'S DIGESTIVE FLUID.)

FOR THE CURE OF

DYSPEPSIA AND MALARIA

This preparation contains in an agreeable form the natural and assimilative principles of the digestive fluids of the stomach and duodenum, comprising **Pancreatine, Pepsin, Lactic and Muriatic Acids.** The best means of re-establishing digestion in enfeebled stomachs, where the power to assimilate and digest food is impaired, is to administer principles capable of communicating the elements necessary to convert food into nutriment.

It is usually given in doses of from one to two tablespoonfuls after each meal, with a small proportion of water or wine, or alone, as it is very pleasant and agreeable to the taste.

Put up in Sixteen-ounce French Square bottles, for Physician's prescriptions, and druggists can attach a label with doctor's directions.

WILLIAM R. WARNER & CO.,

1228 Market Street, Philadelphia.

22 Liberty Street, New York.

SUPPLIED BY ALL DRUGGISTS.

DYSPEPTICS!

POPP'S GERMAN STOMACH POWDERS.

The most Efficient Remedy of the day.

Numerous conclusive testimonials sent for 2 cent stamp.

MAILED FOR 75 CENTS PER BOX.

J. WALTHER, Jr., Druggist, 527 S. Halsted St., Chicago.

ROYAL CREAM CHOCOLATE.

This is the purest and most delicate preparation of Chocolate in the market. It is entirely free from any oily and indigestible matter, and is especially suited to dyspeptics, consumptives, and those having weak stomachs. Its regular use will strengthen the most feeble constitution in a few weeks, and its speedy beneficial effects will surprise those who try it.

Physicians recommend it.

ROYAL FOOD CO.,
NEW YORK



35,000 Sold.

HOW TO STUDY THEM

A manual of Character Reading for the people, an intensely interesting and attractive book. Every body should read it. 200 pages, 200 fine illus. 40 cts.

SENT FREE

A SAMPLE NO. OF THE

Phrenological Journal,

A magazine of HUMAN NATURE for every body. $2.00 a year, 20c. a no., and a list of **BOOKS** on Phrenology, Physiognomy, Health, Heredity, &c. Send address on postal.

FOWLER & WELLS CO., 775 Broadway, N. Y.

CURE FOR THE DEAF

PECK'S PATENT IMPROVED CUSHIONED EAR DRUMS **Perfectly Restore the Hearing,** and perform the work of the natural drum. Invisible, comfortable and always in position. All conversation and even whispers heard distinctly. Send for illustrated book with testimonials **FREE.** Address or call on

F. HISCOX, 853 Broadway, N. Y.

Mention this Journal.

FAT **CORPUS LEAN** *will reduce fat at the rate of 10 to 15lbs. per month without affecting the general health.* **6c.** *in stamps for circulars covering testimonials.* S. E. MARSH Co., **2315** *Madison Sq., Philadelphia, Pa.*

MADE **ABSOLUTELY HARMLESS** *simply stopping the FAT-producing effects of food. The supply being stopped the natural working of the system draws on the fat and at once reduces weight.* LEAN

ESTABLISHED 1857.

J. H. CUTTER,

OLD

BOURBON AND RYE WHISKIES.

We are the Sole Owners and Proprietors of this Celebrated Brand of Whiskey.

C.P. MOORMAN & CO. **LOUISVILLE, KY.**

We Guarantee the Superior Quality and Absolute Purity of every Barrel of Whiskey sold by us under this Brand.

W. P. FESSENDEN, Agent for N. E. States, Maryland and Penn., 11 Central St., Boston.

THE OLDEST.

THE GENUINE EAU DE BOTOT BOTOT WATER

THE ONLY DENTIFRICE APPROVED BY THE ACADEMY OF MEDICINE OF PARIS. FRANCE.



FOR MORE THAN A CENTURY IN GENERAL USE IN EUROPE.
SOLE AGENT FOR THE UNITED STATES. FREDERIC REISET. 44 BEAVER STREET. NEW YORK.

THE BEST.

SEND

YOUR WIFE

THE

American Analyst.

$1.00 A YEAR.

Back Numbers of the current volume, may be had at this office, Five Cents each.

ESTERBROOK'S STEEL PENS

Leading Numbers



14, 048, 128, 130, 135, 333, 161.

For sale by all stationers.

THE ESTERBROOK STEEL PEN CO., 26 John St., N. Y.

Works: CAMDEN, N. J.

ESTABLISHED 1835.

CORNWALL & BROTHER

—) FINE (—

Milled, Toilet and Laundry

SOAPS AND CANDLES,

LOUISVILLE.

CARNRICK'S SOLUBLE FOOD

FOR INFANTS AND CHILDREN.

For Mothers, Invalids, Dyspeptics & Aged People.



THE ONLY FOOD *that digests as easily as human milk, and agrees with all infants and children.*

THE ONLY FOOD *that thoroughly nourishes the child without the addition of cow's milk.*

THE ONLY FOOD *that removes from infancy all necessity, danger and annoyance of a wet nurse.*

TAKEN BY MOTHERS *once or twice a day the quantity of milk will be increased and quality at once improved.*

IF THE CHILD IS RESTLESS, *change partially from nursing to* **SOLUBLE FOOD.**

DR. STUTZER, Food Analyst for Rhenish Prussia, says: "CARNRICK'S SOLUBLE FOOD is the best of all the foods I have ever examined."

"OUR BABY'S FIRST AND SECOND YEARS," by Marion Harland. Book of 64 pages, giving careful instructions for bringing up the little ones. Sent free by

REED & CARNRICK, N. Y.

ARMOUR & CO.

CHICAGO, ILLS.

PACKERS OF

Pork and Beef Products

CANNED MEATS,

ETC.,

FOR HOME CONSUMPTION AND FOR EXPORT

TO ALL PARTS OF THE WORLD.

Also,

SHIPPERS OF

Choice Dressed Beef,

MUTTON AND HOGS,

In Refrigerator Cars,

To BOSTON,

NEW YORK,

PHILADELPHIA,

BALTIMORE,

And other cities throughout the country.

NATRONA BI-CARBONATE OF SODA.

(ABSOLUTELY PURE.)

NATRONA



TRADE MARK

SODA

The nature of the raw material from which NATRONA BI-CARBONATE OF SODA is made—viz., kryolith, a mineral containing *pure sodium*—insures a purity and uniformity of product which cannot be obtained from any other known material. In making BI-CARB. SODA from any other raw material, the use of sulphuric acid is a necessity, but none is used in any part of the process of making NATRONA BI-CARB.; hence its entire freedom from the slightest trace of arsenic, which is always present in ordinary soda. Its absolute purity and entire freedom from all traces of *sulphate of soda*, common salt and other impurities, render NATRONA BI-CARB. NEARLY TASTELESS, and being bolted through the finest bolting-cloth, insures the finest stage of division.

To these indisputable facts the attention of CONSUMERS of soda is specially called. They are IMPORTANT, and should influence both those who use and those who sell soda, to buy and sell NONE BUT THE BEST.

The NATRONA BI-CARB. Soda is kept in stock by almost every wholesale druggist and grocer throughout the United States, of whom it may be ordered.

Natrona Bi-Carb. Soda is unequaled by any other brand of English or American Manufacture.

PENNA. SALT MANUFACTURING CO.,

NATRONA CHEMICAL WORKS. PHILADELPHIA, PA.

ESTABLISHED 1849.

DEAN'S PATENT

ARDENTER MUSTARD.

BEST IN THE WORLD.

WARRANTED ABSOLUTELY PURE.



WARRANTED ABSOLUTELY PURE.

Ardenter Mustard Pellets

—FOR—

Dyspepsia and Indigestion.

UNIVERSALLY recommended and prescribed by physicians. The medicinal property are English mustard seed coated with pepsin and sugar. You will find it will relieve you after using two or three doses. It is very beneficial for Heartburn, Sour Stomach and Headache. They are a beautiful confection for children. Each bottle contains full directions.

W. G. DEAN & SON,

361 and 363 Washington Street, 84, 86 and 88 North Moore Street, New York.

Sura Cura ROBINSON'S SURE CURE FOR

RHEUMATISM

And NEURALGIA,

And remedy for diseases arising from an impure state of the blood. An antidote for **MALARIA.** Price 50 c. and $1. Sent by mail on receipt of price. Send for Circular.

R. W. ROBINSON & SON,
184 Greenwich Street,
NEW YORK.

Sura Cura



GOLD MEDAL, PARIS, 1[illegible]

BAKER'S Breakfast Cocoa.

Warranted ***absolutely pure Cocoa,*** from which the excess of Oil has been removed. It has *three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup.* It is delicious, nourishing, strengthening, easily digested, and admirably adapted for invalids as well as for persons in health.

Sold by Grocers everywhere.

W. BAKER & CO., Dorchester, Mass.

A. H. WIRZ,

MANUFACTURER OF

Bottle Stoppers

—AND—

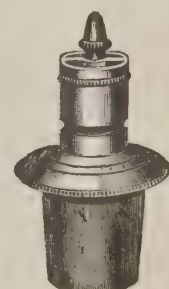
COLLAPSIBLE TUBES,



No. 740.



Collapsible Tubes.



Nos. 92, 93, 94.

—AND ALL KINDS OF—

Metal Goods

913-917 CHERRY STREET,

PHILADELPHIA, PA.

A POTENT REMEDY

—)FOR(—

INDIGESTION, ACUTE AND ATONIC DYSPEPSIA, CHRONIC AND GASTRO-INTESTINAL CATARRH, VOMITING IN PREGNANCY, CHOLERA INFANTUM, AND IN CONVALESCENCE FROM ACUTE DISEASES.

Over 5,000 Physicians have sent to us the most FLATTERING OPINIONS upon DIGESTYLIN, as a REMEDY for all diseases arising from improper digestion.

For 20 years we have manufactured the DIGESTIVE FERMENTS expressly for Physicians' use, and for the past year **DIGESTYLIN** has been by them extensively prescribed, and to-day it stands without a rival as a digestive agent.

KIDDER'S

DIGESTYLIN

FOR

INDIGESTION & DYSPEPSIA

It is not a secret remedy, but a scientific preparation, the formula of which is plainly printed on each bottle. Its great DIGESTIVE POWER is created by a careful and proper treatment of the ferments in manufacture. It is very agreeable to the taste, and acceptable to the most delicate stomach. For the reliability of our statements, we would respectfully refer to the WHOLESALE and RETAIL DRUGGISTS of the country, and PHYSICIANS generally. Sold by Druggists, or

WM. F. KIDDER & CO.,

PRICE, $1.00. **83 John Street. New York.**

ON THE USE OF PURGATIVES.

BY CHARLES A. HOFF, M. D., ST. LOUIS, MO.

Of all preparations contained within the *pharnacopœia;* there are none, apparently, held in higher esteem by mankind than that class of medicines, commonly known as purgatives. The busy practitioner confidently prescribes them with variable frequency, singly and combined, from the date of the writing of his very first prescription to that of his last; and the corner druggist rarely sees a day pass over his head on which he does not greet the customer who has called around to get "something to act upon his bowels." Indeed, the inevitable purgative awaits the tiny baby screaming in its first attack of colic; it is resorted to by the invalid weighted down with years of suffering and disease; and it is by no means despised by the individual in robust health, when assailed by the various petty ills, which even the most vigorous seldom entirely escape.

Notwithstanding the fact that purgatives are so generally prescribed by the physician, and so frequently resorted to without advice by the patient, they are not altogether incapable of doing harm. As everybody knows, the habit of purging the system repeatedly with salines, cholagogues, hydragogues, or drastics, is a most pernicious one; and the physician who fails to exercise a proper care, both in the selection and the administration of cathartics will sooner or later bankrupt the health of his patients as well as his own hard earned reputation.

Constipation is a complication of so many disorders, a symptom of so many diseases that its treatment in different cases depends upon very different considerations. For a simple, ordinary attack, the average doctor has been accustomed to use a simple purge, such as castor oil, sulphate of magnesia, rhubarb, senna, aloes, colocynth, blue pills, etc.; yet in none of these, can it be truly said, has there been found all that could be wished for, even in so simple a matter as a laxative. Where can we find the physician who has not been vexed and annoyed at the complaints of his patients against the purgative medicines he has been accustomed to prescribe. Some people there are who can not or will not swallow pills; many object to the nauseating castor oil; not a few oppose the use of salines since they are disagreeable both in taste and effect; many look upon all resinous cathartics as objectionable on account of their so called heating properties; aloes is objected to in pills and especially in pregnancy; elaterium is said to be excessively harsh and severe, croton oil is known to be dangerous; podophyllin causes an undue amount of griping; blue mass is avoided on general principles; and so on to the end of the chapter.

Fortunately, however, the physician of the present need no longer be placed in a dilemma when called upon to prescribe a preparation free from the faults enumerated in connection with ordinary purgatives. The pharmacist has bravely come to his aid with a formula of incomparable excellence; and this preparation, a combination of "manna, purified cathartic acid and fruit juice," although but recently brought to the notice of the medical world, is, nevertheless, already regarded as a most valuable addition to the resources of medicine.

The happy thought that suggested the combination known as the Rio Chemical Co.'s Acid Mannate justly challenges unlimited admiration and esteem, and has thus far evoked from the profession an almost universal verdict of commendation and praise. Prompt, mild and certain in its action, Acid Mannate may well be considered an ideal remedy in the constipation of pregnancy. Being pleasant to the taste, and continuing its good work without increased dosage, it is pre-eminently adapted to cases of habitual constipation. Indeed, in its wide range of adaptability as an aperient medicine it is impossible to exaggerate its importance, or allude either directly or indirectly to the vast variety of its beneficial, therapeutical properties.

The importance of laxatives is probably nowhere appreciated so much as in the constipation of pregnancy; and it is to this fact, no doubt, more than to any other, that Acid Mannate owes its great popularity and fame among remedial agents. The testimony of thousands of honorable medical gentlemen leading us to believe that, through the beneficent effect of this same elegant formula, constipation need not hereafter, as in the past, be regarded as one of the most troublesome attendants upon gestation. Moreover, the atrocious female pill of unknown composition but of dire effect, which has deluded the drug market for ages, we may consider as having had its day; and it is to be hoped that, since the physician is now in possession of a purgative especially suited to the period of gestation, female life will be less frequently harassed by the ails and aches said to be peculiar to the sex; and that miscarriages, displacements, granular erosions, congestions, headaches, dyspeptic and hypochondriacal attacks, and the whole long train of aches, pains and nervous ills will grow less familiar to the medical profession in the same ratio that the physician increases his familiarity with the actions of Acid Mannate.

A full sized bottle of Acid Mannate will be sent free to any Physician who desires to test it, if he will pay the express charges and mention this Journal, on application to the

RIO CHEMICAL CO.,
St. Louis, Mo.

GORDON & DILWORTH

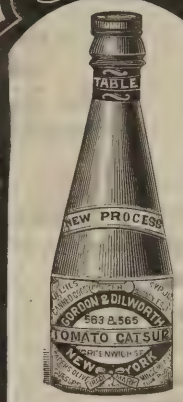
MANUFACTURING PURVEYORS

Established 1847

ALIMENTARY PRODUCTS

ALL OF OUR PRODUCTIONS BEAR THIS TRADE MARK

WE WILL PROSECUTE ALL INFRINGEMENTS & IMITATIONS







CHOICE DESSERTS

OVER 100 DOMESTIC & FOREIGN FRUITS AND VEGETABLES TRANSMUTED INTO TABLE DELICACIES

PRICES ON PRESERVED FRUITS REDUCED 1ST DEC. 1885

PRESERVED, CANNED & BRANDY-FRUITS, FRUIT-JELLIES, VEGETABLES, TOMATO-CATSUP, SYRUPS & JAMS, SALAD-DRESSING, BLACKBERRY BRANDY, MINCE-MEAT, PLUM PUDDING, SWEET PICKLES, OLIVES & CAPERS, WINE-JELLIES, MARMALADE, SOUPS, SAUCES, &c.

SOLD BY THE LEADING GROCERS ON THE AMERICAN CONTINENT.

SCOTT'S EMULSION

OF PURE COD LIVER OIL WITH

HYPOPHOSPHITES OF LIME AND SODA.

THE STANDARD EMULSION OF COD LIVER OIL THROUGHOUT THE WORLD.

A BEAUTIFUL CREAMY MIXTURE—ALMOST AS PALATABLE AS MILK.

Having much greater remedial power than the crude Cod Liver Oil, without any of its nauseating effects.

Its PALATABLENESS, EASE OF DIGESTION, and long tolerance by most sensitive stomachs as well as its reliable therapeutic effect, has given it special favor with the medical Profession, and receives their unqualified endorsement and support.

Possessing as it does the tonic and stimulating properties of the Hypophosphites in combination with the strengthening and fattening qualities of the Cod Liver Oil—gives it a remedial value in WASTING DISEASES, ANÆMIA or IMPOVERISHED BLOOD, EMACIATION and CONSUMPTION—unequalled by any single or combined remedy in existence. The rapidity with which delicate children fatten and grow strong on this palatable Emulsion, is very remarkable.

Samples will be sent free except express charges to any wishing to try this preparation. For sale by all druggists.

SCOTT & BOWNE, New York.

THE FINE COFFEES

ROASTED AND SOLD

BY THE

Schnull-Krag Coffee Co.

are shown by analysis and test, to be equal to any Coffees produced in America. By the superior process of roasting and blending, which is a well guarded secret of the proprietors, they have been able in a short time to place their goods in all the States of the West and North-West; and while it may seem like carrying coals to Newcastle to ship these goods to the markets east of us, yet as they are packed in patent air tight cans, thus preserving the aroma as well as avoiding contamination of the goods with the impure atmosphere, it is not only safe, but in all respects practicable to ship to all points east or west without the risk of having the goods depreciated in transportation. To dealers who are desirous of testing these coffees, they can have them sent on trial, and if at the expiration of sixty days they are not entirely satisfactory, they may be returned at our expense. This coffee is packed in 50 lb. air tight cans. For price list and descriptive circulars, address the Company.

THE SCHNULL-KRAG COFFEE COMPANY,

INDIANAPOLIS, IND.

Tabasco Pepper Sauce

OR LIQUID PEPPER.

Is simply the Pulp of the Ripe Pepper Extracted by Pressure.

The seed of this Pepper was obtained from Central America, and by careful cultivation in Louisiana for many years has been so improved in strength, flavor and aroma, as to have become a new variety of Red Pepper, superior to all others. The pulp is so handled as to retain all the flavor, strength, aroma and color of the ripe fruit, and to keep unimpaired in any climate. It excites the appetite, promotes digestion, and is pronounced, by connoisseurs, to be the finest condiment in the world. For medicinal purposes it recommends itself by its purity, strength and diffusible form.

Manufactured by E. McILHENNY,

NEW IBERIA, LA.

For Sale by all Wholesale Grocers.

SWIFT'S

Choice Chicago Dressed Beef

—AND—

MUTTON.

CAN be found at all times in full supply and at popular prices at the branch houses in all the larger cities and is ***retailed by all first class butchers.***

The trade of all marketmen and meat dealers is solicited for our Wholesale Branch Houses, and the ***public may rest assured*** *that in* ***purchasing our meat*** *from dealers they will* ***always receive the best.***

SWIFT AND COMPANY,

UNION STOCK YARDS,

CHICAGO, ILLS.

PEACOCK'S BROMIDES

(SYR: BROM: COMP: PEACOCK)

NERVE SEDATIVE.

Each fluid drachm represents 15 grains of the Combined C. P. Bromides of Potassium, Sodium, Calcium, Ammonium and Lithium.

USES:—EPILEPSY, and all CONCESTIVE, CONVULSIVE, and REFLEX NEUROSES.

This preparation has stood the test of time and experience, and can be relied upon to produce results, which can not be obtained from the use of commercial bromide substitutes.

DOSE:—One to two FLUID drachms, in WATER, three or more times a day.

PEACOCK CHEMICAL CO., St. Louis.

American Analyst,

Published on the 1st and 15th of each month.

At 19 PARK PLACE, NEW YORK.

EUROPEAN AGENCIES.

On file at "American Exchange," 449 Strand, London; and American Exchange," 35 Boulevard Des Capucines, Paris.

F. W. DEVOE & CO.,

ESTABLISHED 1852.

PURE MIXED PAINTS

WE desire to call attention of consumers to the fact that we guarantee our ready-mixed paints to be made only of pure linseed oil and the most permanent pigments. They are not "Chemical," "Rubber," "Patent," or "Fireproof." We use no secret or patent method in manufacturing them by which benzine and water are made to serve the purpose of pure linseed oil. Sample cards containing 50 desirable shades, sent on application.

Catalogues of our different departments to responsible parties.

FINE VARNISHES, WOOD FILLERS, WOOD STAINS.

Artist's Materials. Mathematical Instruments.

Cor. Fulton and William Sts., New York.

COFFIN, DEVOE & CO.,

179 RANDOLPH STREET, CHICAGO.

IMPORTANT

TO THE

MEDICAL PROFESSION.

Send your address to THE NEW YORK PHARMACEUTICAL COMPANY, BEDFORD SPRINGS, MASS., for Illustrative Hand-book, **FREE,** containing valuable formula, special directions, and the testimonials of one thousand physicians in favor of the great merits of

HAYDEN'S

Viburnum Compound,

IN FEMALE DISEASES.

Also, the

URIC SOLVENT,

For KIDNEY DISEASES, and complaints arising therefrom.

CORSETS.

THE SUBJECT CONSIDERED FROM OPPOSITE MEDICAL STANDPOINTS.

(*Continued.*)

The Thoracic Breathing of Women.—May the peculiar character of the respiration in women be attributed to the use of corsets? Two observers who are especially qualified to testify, have stated the case so forcibly that I quote them entire. Sibson has made by far the most extended of all the studies of the mechanism of respiration. His painstaking accuracy is Teutonic. Walshe's opinion carries great weight. Sibson says: "In the adult female the form of the chest and abdomen and the respiratory movements, are often undoubtedly modified by tight lacing. The form of the chest and the respiratory movements do not differ perceptibly in girls and boys below the age of ten. Although the form of the chest remains nearly the same until the age of twelve, the abdominal movement is then somewhat less and the thoracic somewhat greater in girls than boys. At this age and earlier, stays are worn, and, though they do not compress the body materially, yet they restrain the free expansion of the lower ribs during free exercise. After the age of fourteen the form of the chest and the respiratory movements differ materially in females and males. When stays are on there is a great exaggeration in the thoracic movement, the second ribs moving forward from 0.06 to 0.2 inch, while, when the stays are off, they only move forward 0.03 to 0.1 (that is, one half as far). On the other hand, the movements of the lower ribs are much more restrained when the stays are on—the abdominal movement then being 0.06 to 0.11 inch, whereas when they are off it is 0.08 to 0.2 inch. The difference at the waist when measured with the tape is very striking, the increased measure during extreme inspiration being 0.05 to 0.3 of an inch when they are on, and from 0.6 to 1.5 when off (from two to thirty times as much). I have found the circumference at the waist from one to two inches less when stays were worn than when they were taken off.

"I think it probable that in females, even if they wore no stays, the thoracic respiration would be relatively greater and the diaphragmatic less than in man, but this is only surmised."

Delicate men, he says further, approximate to the female thoracic breathing, vigorous women to the male abdominal breathing, and long distance runners have the least thoracic breathing of all men (in the quiescent condition). The diaphragm would seem, therefore, to be a muscle capable of developing to meet increased demands as much as any other that the athlete strengthens. I can not help thinking that the great excess of that movement and the limitation of thoracic play to the upper thorax in the civilized adult female are due in no small part to the unyielding cases interfering with inferior costal and phrenic action. The agricultural woman, who knows not stays, breathes more like a man than the town female. Besides, during sleep, the conditions of pectoral and ventral action of the female are much less strikingly different from those in the male than in the waking state; the waist is relieved for a time from constriction. And, further, the male and female dog breathe almost exactly alike, as do the horse and mare; the action is abdominal and lower costal. Dr. Mays, of Philadelphia, has recently studied the respiratory movements of Indian girls in the Lincoln Institution. They had always worn loose clothing. They ranged between ten and twenty years of age. Tracings from their costal and abdominal respiratory movements showed a very close analogy to those of the civilized male, and that, "so far as the Indian is concerned, the abdominal is the original type of respiration in both male and female, and that the costal type in the civilized female is developed through the constricting influence of dress around the abdomen. This is markedly shown in the greater prominence of the costal movements in those girls who were either one half or three fourths white, and who were hence dominated to a greater or less extent by the influence of civilized blood. It is also evident that the costal type of respiration in the civilized female is not due to the influence of gestation. The expansion of the lower ribs," says Sibson, "is much more impeded than the descent of the diaphragm." By measurements to be detailed farther on, I find that, comparing full inspiration and complete expiration, the pelvic floor has a range of respiratory movement about one fourth less when the corsets are fairly tight than when they are off, whereas the lower ribs are so firmly incased as scarcely to expand at all. An old, broken, or very loose corset allows some inferior costal play; but, since this is the location of the ring of most marked constriction, even these cripple it considerably.

(*To be continued.*)

ELECTRIC SPEED.—Electricity has been found to travel 288,000 miles per second under favorable circumstances.

The Standard of Excellence.

KINGSFORD'S

OSWEGO

Pure and Silver Gloss



STARCH

KINGSFORD'S

OSWEGO CORN STARCH

FOR

Puddings, Custards, Blanc-Mange, Etc.

THE PERFECTION OF QUALITY.

WILL PLEASE YOU EVERY TIME.

Always ask your Grocer for these goods.

COLDEN'S

ORIGINAL LABEL:
"Colden's Liebig's Liquid Extract of Beef and Tonic Invigorator."

LIQUID BEEF TONIC.

AN INVALUABLE AID IN THE TREATMENT OF ALL CASES OF DEBILITY.

Established 15 Years. Endorsed by Scores of Physicians.
Essentially Different from all other Beef Tonics.
Beware of Imitations.

COLDEN'S LIQUID BEEF TONIC consists of the Extract of Beef (by Baron Liebig's process), spirit rendered non-injurious to the most delicate stomach by extraction of Fusel Oil, soluble Citrate of Iron, Cinchona, Gentian and simple aromatics. An official analysis of this preparation by the eminent chemist ARTHUR HILL HASSALL, M. D., F. R. S., and an endorsement by SIR ERASMUS WILSON, F. R. S., is printed on the label of each bottle.

Its Range of Action Embraces all Cases of Debility.

By the urgent request of several eminent members of the medical profession, I have added to each wineglassful of this preparation two grains of SOLUBLE CITRATE OF IRON, and which is designated on the label as "No. 1," while the same preparation, without Iron, is designated on the label as "No 2."

It acts directly on the sentient gastric nerves, stimulating the follicles to secretion and gives to weakened individuals that first pre-requisite to an improvement, an appetite.

☞ *I will, upon application, send a sample bottle of Colden's Liquid Beef Tonic to any physician in regular standing. Please ask your Dispensing Druggist (if he has not already a supply) to order it. In prescribing this preparation physicians should be particular to mention "COLDEN'S" viz: "EXT. CARNIS. FL. COMP. (COLDEN). It is put up in pint bottles and can be had of Wholesale and Retail Druggists generally throughout the United States.*

C. N. CRITTENTON, Sole Agent,

115 Fulton Street, N. Y.

Please Mention the AMERICAN ANALYST.

SOME EVERY DAY SUGGESTIONS.

THE DANGERS OF UPHOLSTERY.

The extent to which the art of the upholsterer enters modern life is seldom taken into consideration by the average citizen. Of the bed furniture, the bolster, pillows and mattress are stuffed with hair, straw, feathers or similar soft and elastic material. The lounge and chairs in the dining-room, the sofa, tete-a-tete and rockers in the parlor are all portions of his handicraft. Scarcely a room in the house contains furniture but he is called upon to aid in its making.

For years this subject has received little or no attention; lately, however, a lady, the head of a large school in London, found that old rags, cloth and rubbish had been used to stuff the bolsters and pillows in the dormitory of that institution, and that the filthy material was in all probability a source of infection to the unfortunate youths who were supposed to be enjoying all the comfort and luxury of a civilized and Christian home.

Spurred to action by this discovery the local health authorities made a number of investigations disclosing the practice to be so common in the trade as to excite neither comment nor curiosity on the part of dealers. Examinations made by physicians and scientists in New York prove the same evil to exist upon a large scale in this city. While there can be no grave objection raised to the practice when it is followed under wise precautions, yet when the liability to yield to industrial temptation is taken into account, it is clear that something should be done to prevent what may be already a very serious source of infection and even contagion, and to remedy the evils that now exist.

The best stuffing or filling for cushions, sofas, mattresses and the like is curled hair; for pillows, curled hair or goose feathers, according to the taste or education of the user. When this padding is fresh and new it is admirable hygienically, being elastic, light, porous and therefore cool. With wear and tear it loses its virtues. It may become the breeding-ground of parasitic life. It *does* absorb gases, vapors and similar substances, and so after a period of some duration demands renovation or else renewal. In respect to the germs of various diseases, there is now no doubt but that the stuffing may act as a vehicle of sickness to a very dangerous extent.

Despite all these facts, furniture of this class is and from time immemorial has been been a favorite commodity with the public. If a home is broken up by disease and the bereaved father or mother stops housekeeping, the invariable practice is to hoist the red flag, call in the auctioneer and sell all the goods to the highest bidders. When the disease is of a virulent type, such as small pox, cholera and yellow fever, the Board of Health generally quarantines the place and disinfects by fumigation or chemicals everything contained within its walls. But with the minor complaints, no matter how contagious or infectious, nothing is ever done. Mattresses reeking with scarlet fever germs, chairs filled with the bacteria of croup, and pillows containing the microbes of consumption are thrown upon the market and are carried to healthful homes by ignorant buyers, there to reproduce the disease, suffering and death they have just witnessed.

Strangest of all, the most popular and crowded auctions are those held in private houses where fatal sickness has induced the heads of the family to relinquish house-keeping and to dispose of their effects. An auction of new furniture at a bankrupt sale, on the other hand, attracts but very few buyers.

This phase of the question unfortunately shows its best side. The bed fixtures and upholstery that have been referred to are of the first quality and make but a small fraction of the entire amount. Beneath the fine-curled hair, the down and first quality feathers is a long list of inferior and cheaper substances. In this list are common horse hair, the refuse of woolen and cotton mills, "excelsior," ordinary shavings, cocoanut fibre, straw, hay, corn husk, old rags, shoddy refuse, waste from various industries, rubbish, and worst of all, the stuffing from worn out and no longer usable ware. Thus, for example, a curio-hunter finds and buys a "kangaroo sofa" in a squalid tenement-house. He wishes only the grotesque frame and sends it to an upholsterer's to be made anew. The artizan does his work thoroughly and, if well paid, sends to his customer a practically new article. The old stuffing he keeps and uses it in his next cheap job. In fact, if he is not well paid in the original instance, he re-uses the old stuffing, merely adding enough new material to turn out a workman-like affair. Trade habits and instincts are immortal and it is highly probable that the stuffing employed by furniture men is used and re-used until it falls to pieces. The only exception seems to be in the case of articles stuffed with straw. Here an ancient custom interferes with trade and periodically empties mattress and bolster and consumes their straw and hay contents in a royal bonfire.

When it comes to old rags, the lowest depth of indecency is reached. The old rag business is to-day in two sets of hands. One, the foreign, represents the shreds and tatters of the Egyptian, Italian and Spanish beggars. These are so vile and dangerous as to require continual governmental supervision by both the consul at the port of shipment and the quarantine commissioners at the destination. The other, the domestic, is now almost altogether in the hands of the Italian and Hungarian ragpickers. These gather the material from the ash-barrels, garbage-heaps, gutters, dumps and dirt-scows of the city and bring them to sorting-yards where they are divided according to their composition and color. The yards are in the lowest slums of the great cities. In New York, they are found in Mulberry Bend, Baxter Bend, Crosby Street and similar notorious neighborhoods. They are hot-beds of disease and are narrowly watched by the Board of Health. The sorted rags, unwashed and not even disinfected, are piled into large bags and taken to the customers of the padrones. While these in the main are felt makers, shoddy manufacturers and paper men, yet a considerable minority are upholsterers and furniture makers. The vastly greater cheapness of old rags to hair, feathers and the like makes them very popular to the two classes of tradesmen just named. And cost and saving are rulers in trade. To illustrate how hard it is to do things which if undone produce financial benefit, a single chapter from hospital experience will suffice. In nearly every great institution of the class the governing physicians who condemn sponges, cloths and towels used in contagious and infectious cases to be destroyed, have found not only that their orders were disobeyed, but also that the steward or some other responsible person was turning a handsome penny by selling the articles.

To use such rags in stuffing bolsters, pillows and mattresses is simply a crime. They are not only dirty, but they are so dirty that they are slowly decomposing. The decaying organic matter in their interstices produces just enough heat to make it a superb forcing house for germ life and parasite life of every kind, and is itself food sufficient to support their existence for a long time. Their mode of collection and disposition almost warrants them to contain some dangerous form of life. It is bad enough to gather such filth; it is worse to work among them; it is worst of all for a human being to make them unconsciously his bed and there to pass hours in which the body is at its weakest and most liable to attract disease. To anyone who bears all the above facts in his mind the following conclusions are inevitable:

1.—Buy or use only new bolsters, pillows, mattresses and furniture, and above all only those whose stuffing is new.

2.—If second-hand furniture is bought, be careful as to its antecedents, and in every case where a perfectly clean past is not assured, remove the stuffing and thoroughly disinfect the same with mercuric perchloride or some very powerful metallic germicide.

3.—Buy no upholstery nor furniture which is stuffed with rags.

4.—From time to time, open all bolsters, pillows and mattresses, remove and disinfect the contents.

HARNESSING NIAGARA.—It is expected that before long a practical test of one of the numerous harnesses for the control of Niagara's power, brought into existence under the stimulus of a $100,000 prize, will receive a practical test, which will demonstrate its use or prove it a failure, and give something further on which to base arguments that Niagara contains no great shakes of available power. An endless chain, with feathering buckets, was the invention of a Buffalo man. The rights for Erie and Niagara counties he sold for $65,000. A stock company with $1,000,000 capital is to be formed if the coming test proves successful.

BURNETT'S PERFECTLY PURE HIGHLY CONCENTRATED Standard Flavoring EXTRACTS

THE superiority of these Extracts consists in their

PERFECT PURITY AND GREAT STRENGTH.

There is no subject which should more engross attention than the purity of the preparations which are used in flavoring the various compounds prepared for the human stomach.

They are not only true to their names, but are prepared from fruits of the best quality, and so highly concentrated that a small quantity only need be used.

JOSEPH BURNETT & CO., Boston, Mass.

ROBERT SHOEMAKER & CO.,

North-East Corner of Fourth and Race Sts., - PHILADELPHIA.

MANUFACTURERS OF

ABSOLUTELY PURE SPICES.

We grind all our spices from the best crude material, cleansing and separating each from all dirt or any foreign substance which may be found.

FLAVORING EXTRACTS FOR COOKING

purposes. These we prepare in the most careful manner from the finest material only. They are highly concentrated and of unequaled flavor.

JOHNSTON'S FLUID BEEF

Is a concentrated and unmedicated extract of the best beef, highly recommended for the instantaneous (by the addition of boiling water) production of a **Beef Tea,** superior in every way to that made by the usual tedious process. For the well or sick, PROFESSOR HARKNESS, *Analytical Chemist to the British Government,* **pronounces JOHNSTON'S FLUID BEEF "ONE of the most perfect foods I have ever examined."**

For "Bullion," "Consommé," indeed all soups, sauces, gravies, etc., it will be found admirably adapted and indispensable after a trial. ROBERT SHOEMAKER & CO. are the General Agents for the sale of **JOHNSTON'S FLUID BEEF** for the United States.

SOLD BY DRUGGISTS AND FINE GROCERS.

AMERICAN ANALYST

—)AND(—

PRACTICAL COOK AND HOUSEKEEPER.

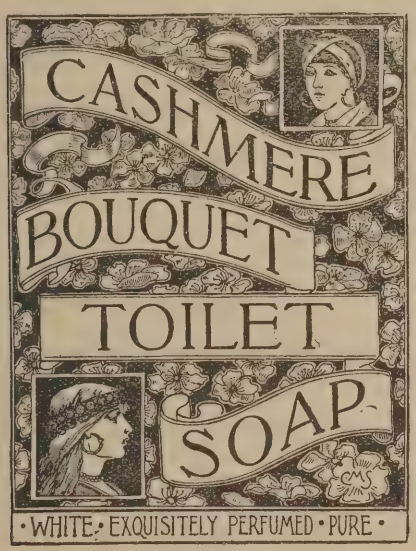
A SEMI-MONTHLY JOURNAL OF PURE FOOD, THE SUPPRESSION OF ADULTERATION,

AND EVERYDAY ADVICE TO THE PHYSICIAN, DRUGGIST AND DENTIST.

Office, 19 Park Place. [Entered at the Post Office, at New York, as Second Class Matter.]

VOL. IV.—No. 2. NEW YORK, JANUARY 15, 1888. Whole No. 74

All Postmasters will receive subscriptions for the **AMERICAN ANALYST.**



THE LARD QUESTION.

LET IT BE SOLD ON ITS MERITS, AND FOR WHAT IT IS.

Armour & Co. have issued a circular on this question, which, as it speaks for itself, we reprint without comment.

Our attitude in respect to the present lard agitation, and our refusal to indorse a movement for the taxation of refined lard which is instigated by rival interests, has occasioned so much criticism and newspaper comment that we think an explanation is in order. We are opposed to the taxation of any food products, whether compounds or imitations, and think any measure which tends to increase the cost, or unnecessarily restrict the sale of food cheapening products is both unwise and unjust. A proper public policy should rather aim at the encouragement of the manufacture and sale of all domestic wholesome food products which lessen the cost of living. Whilst opposed to the taxation of such products, we are in favor of their sale upon their merits, and will cheerfully support any anti-adulteration bill which fully covers the manufacture and honest sale of all commodities under their true and proper names, and which provides for the entire prohibition of the manufacture or sale of any and every article of food which is deleterious to the public health, but we must insist that there is no justice in singling out refined lard or any one food product which is admittedly wholesome and meritorious, for special legislation. Full consideration should be given to the rights and obligations of small merchants under such laws; but petitioning manufacturers eager for the protection of their private interests only, care little what trouble small dealers are subjected to; in fact, their purposes in advocating such legislation seems to be to make the law so onerous that retailing dealers either can not or will not attempt to do business under it. The English government has shown far more consideration for the mutual interests and protection of both the public and its tradesmen, and we believe that in its "Merchandise Marks Act" has enacted a measure which insures to the public the fullest protection from imposition, and to the dealer the least possible inconvenience. If any honest attempt is made in this country to enact such a law, one that shall be more a regulation than a restriction and one fully covering all food products, drugs and other commodities, we will give it our hearty encouragement. We manufacture all grades of lard as well as the refined, and will suffer no injury in our lard business by any law which does not injure the entire trade in that product, but we firmly believe that refined lard is a meritorious and wholesome product, and that any legislation concerning it should be fair and not restrictive or prohibitory. All the public can or should require is that it should be sold under its proper name, and that should be only under a general law covering the sale of all products.

In connection with this the response of the Lard Committee of the N. Y. Produce Exchange to a communication from the Société Commerciale, Industrielle et Maritime of Antwerp, complaining of the quality of the lard received from the United States, may be of interest. In the answer it is stated that the complainants treat of refined lard, and not of the natural lard, over which the Exchange committee has a direct supervision. Then this tribute is paid to the so-called refined lard:

"Much of it is known as a compound of various substances, mostly of a fatty or oily nature, of which the major part is generally natural lard, put up by manufacturing firms in this city and the Western packing points to meet a demand principally from abroad, because of its cheapness compared with natural lard. The West Indies, the Continent of Europe, and notably the city of Antwerp, are large purchasers of this manufactured article. It does not come under the supervision of the Exchange or control of the Lard Committee in any way, but is made to order by the manufacturer to suit the requirements of the purchaser as to quality and price, and although as a rule it is branded 'Lard' in some of its various qualities, it is so branded either by understanding or requirement of the purchaser, with full knowledge that it is an adulterated article. The Société Commerciale, Industrielle and Maritime is laboring under a misapprehension when it supposes that the manufacturers of this compound are commiting a 'fraud' upon the purchasers. They simply fulfil the terms of sale, and while this committee disapprove of and condemn the practice of the manufacturer in branding this product as genuine when it is spurious, and thereby countenancing possible fraud by others, yet it must be said in justice to the American manufacturer that if fraud as charged by the respected society, is practiced upon the consumer, it must be so practiced after the produce reaches its Continental destination. While this committee was making this investigation it came to its knowledge that 'refined lard' so called, was purchased with full knowledge as to quality for a Continental market at fully 25 per cent. less than the price of natural lard of contract standard on the day the contract was consummated. This tells its own story, and illustrates that as far as Antwerp is concerned the remedy lies with her merchants. If they will purchase from our manufacturers a genuine and not a spurious article, at its fair market value, the consumers of lard in that or its dependent markets will have no further cause of complaint."

FIBERITE.—Fiberite is a new insulating material made from wood pulp, and is being used for storage cells and by various electrical concerns. It is said to give satisfaction.

POISON IN CROCKERY.

DIRT A NECESSARY EVIL BUT POISON AVOIDABLE.

When we are compelled to eat at restaurants or in hotels we may find it necessary to console ourselves with the old stereotyped saying that we must, each of us, eat a peck of dirt. We can, as we frequently have to, close our eyes to much that would injuriously affect our appetite. We need not, for instance, reflect that the plates we eat from have been washed in dish water so filthy that it is a question if the water is capable of taking up any more dirt, or if the dirt in the water does not really add filth instead of taking it off. We are not compelled to smell of the plate to verify our suspicions that along with our beefsteak, we are also getting a faint but characteristic odor of the fish which were last eaten from that plate. Nor need we appear to be looking, when the superservicable waiter adds the few well-known finishing touches, with that classic and altogether too handy adjunct, the side towel, which as every one knows is religiously kept by that very neat-looking functionary to go through that particular pantomime of an extra wipe for an expected extra *douceur*, but is also employed to wipe off anything that should not be on table or chair as well as the greasy perspiration from the shining face of the African, Gaul, Teuton or Celt whom fortune has compelled us to allow to wait on us, or any portions of the meal which he may have accidentally spilled on any one's clothing or boots. All this we may be compelled to submit to, and while it is nasty and even unhealthy it is not absolutely poisonous. But when it comes to eating poison of the most insidious kind with our food it is time to stop. We boldly assert that all American china and glazed crockery ware is enamelled with a preparation consisting largely of the red oxide of lead, or as it is commonly known, litharge. This salt of lead is very soluble in the fatacids especially in butyric acid. All fatty foods contain this acid and when from the frequent alternate expansion and contraction of the enamel or glazing on the various dishes and plates we use on the table, cracks have formed, the butyric acid insinuates itself under the enamel, takes up the lead, and with the food on the plate is taken into the stomach, where being a cumulative poison it insiduously poisons the system. Do not let us deceive ourselves by thinking that the quantity of the lead is small, but remember that the quantity of lead set free by carbonic acid in the water running through a lead pipe is still less, and yet no less an authority than Professor Chandler has proven conclusively that much lead-poisoning is due to this. If this is so, and there can be no doubt of it, then how much more dangerous must be these lead enamelled china dishes and plates? We have special reasons for calling our subscribers' attention to this lurking danger, because plates and dishes can be enamelled without using lead. At our request Professor Francis Wyatt the well-known chemical expert is making some experimental analyses on this lead enamel, the results of which, with all their startling and interesting facts, we will lay before the reader in an early number.

American Analyst,

Published on the 1st and 15th of each month.

Subscription, - - - - - - $1 per year.
Single Copies, - - - - - - 5 cents.
Subscriptions to foreign countries, - $1.50.

Remit by Express Money Order, Draft, P. O. Order, or Registered Letter.

Advertising rates on application.

THE ANALYST PUBLISHING CO., *Publishers.*

H. LASSING, M. D., } *Editors.*
T. P. McELRATH, }

No. 19 Park Place, ... New York.

NEW YORK, JANUARY 15, 1888.

ANSWERS TO CORRESPONDENTS.

STUDENT.—*What is a German "loth?"* The old German weight called a loth was 225.55 grains troy. German-American apothecaries usually dispense half an avoirdupois ounce for it.

MEDICUS.—*What is Phenacetin?* It is said to be an antipyretic powder of a reddish color, odorless and tasteless, soluble in alcohol. The dose is from 3 to 10 grains. It was called p-acetphenetidin and acetylamidophenol, but phenacetin is more convenient.

PRACTITIONER.—*Which of the medicated soaps, the domestic (S. & J.) or the imported German, do you recommend?* If the American product were what it is represented, we would give it the preference over the German, but it is not, hence we recommend the imported German medicated soaps.

NORMAL.—*What is Kephir?* Kephir itself is a species of mushroom found in the Caucasus. This is added, when suitably prepared, to fresh milk, which then by fermentation changes to a substance very similar to Koumiss, richer in albumen, but less acid and alcoholic, which is called Kephir?

TRADING ON REPUTATION.

On entering a large jobbing house lately, we were shown some candies which it would be charitable to designate only as trash, and were very much astonished to be told that the goods came from a New York manufacturer who enjoys a good reputation for making first-class goods. A little investigation soon showed that there are several manufacturers of candy, chocolate and confectionery here who maintain a good reputation by keeping only the best and highest priced goods in retail stores connected with their business, and on the reputation thus earned are able to make and sell to the jobbing trade some of the vilest trash that ever was sold to innocent purchasers. The most curious part of this is that all parties to the transaction seem to be satisfied. The manufacturer says: "I can make fine goods, but they won't pay me my price; so, not to lose my trade, I must make my goods to suit the price; however, as my name is only on the barrel or large package, the public will never know it." The jobber and retailer can flatter themselves that their goods come from a manufacturer with a big reputation, yield a large profit, and the public will not find out how they have been deceived, while the poor, deluded public labors under the mistake that they are buying the best goods from a first-class maker, at but a slight advance on the inferior goods of other and less known confectioners. The morality of the whole thing is not so evident. We must again remind the public that if they would follow the rule we have so often laid down, to buy only package goods bearing the makers' name, they could not be cheated in this way, for none of these manufacturers dare to put their names on packages of inferior goods to reach the public. Insist on original packages, be willing to pay a fair price for pure, straight goods, and you are secure.

THE KEELY MOTOR.

The first annual meeting of the stockholders of the Keely Motor Company since 1883 was held recently in Philadelphia, and was attended by about seventy-five stockholders, representing nearly seventy thousand shares. The report of the directors, which was read and accepted, embodied these conclusions: The directors are more than ever satisfied that the enterprise is absolutely based upon the application of a new motive power; that Mr. Keely has underestimated in many particulars the time necessary to the completion of his work; that, notwithstanding the doubts expressed in some quarters, the board still has high hopes, a steady and in fact wonderful progress having been made in Mr. Keely's work; that the chief difficulties have been removed, and that we are now in sight of the result. The report of Mr. Keely, in response to the request of stockholders for a statement of progress made, was then read. In it the inventor says that since March, 1885, phenomena have been unfolded to him opening a new field of experiment, as the result of which he has become possessed of a new and important discovery. However, he says, his operations will be conducted without either the vaporic or etheric forces which heretofore played such an important part in his exhibitions. What name to give his new form of force he does not know, but the basis of it all, he says, is vibratory sympathy. It may be divided, too, into negative and sympathetic attraction, these two forms of forces being the agents of each other. As to the practical outcome of his work, Mr. Keely could make no promises. He had no doubt that he would sooner or later be able to produce engines of varying capacity so small as to run a sewing machine, and so large and powerful as to plough the sea as the motive force in great ships. His ultimate success, he still holds, will be greater than even his most sanguine advocates have predicted.

BLACKMAIL, OR WHAT?

"Victim" has written a letter to the *Oil, Paint and Drug Reporter*, on the subject of "Countenanced Blackmail," as levied on manufacturers and others by the publishers of "price lists," which sometimes appear in the guise of journals. He writes:

It is possibly liable to shock the sensitive nerves of the gentlemen who issue these lists, to have their efforts for the dissemination of knowledge among a thirsting constituency of pharmacists, characterized as blackmail upon the manufacturers and proprietors whom they expect to pay for the disseminating; but that is what it amounts to in many cases. In some cases orders for proprietary goods are accompanied by the proviso, "On condition that you advertise in our price list." When presented in its most courteous form, the demand for advertising in this class of publications can be nothing more than a plea for alms. There is no *quid pro quo*, and in many instances the issuing of the work is simply a means of getting so much extra discount out of the manufacturer who inserts a card. So long as he will stand this tax it is no wonder that new houses are every year starting some sort of a medium by which to get the extra discounts that their competitors have previously been enjoying. There is an absolute waste of money in issuing so many lists, which are seldom, if ever, referred to by the retailers to whom they are sent, and would be of little use to them in case they did consult their pages. Doubtless the lists issued by some houses are valuable books of reference, but such houses should be above asking those who have no interest in the matter to pay what, if it is warranted at all, should be deemed a legitimate item in the expense of doing the jobbing business.

This evil is unfortunately not confined to pharmaceutical price lists, but abounds in other lines. Where ever a price list or trade journal exists which is run in the interest of any one house, this blackmailing abounds. The injury is retroactive as well, because generally the managers of the house organ pay commissions to any one, which results in almost direct bribery of the buyers for the house.

POISONOUS FLANNEL.

"Professor Bohanon, of the Ohio State University, has been suffering from the effects of poison introduced into his system by wearing red flannel underclothing. A couple of weeks since the professor purchased a number of suits, and soon after putting them on commenced suffering from a burning sensation of the skin. Large blotches appeared all over his person. A physician pronounced the case one of poisoning from the red flannel suits. One of the garments was soaked in water which was examined by the college chemist, who pronounced the solution thus obtained extremely poisonous, only a small quantity being necessary to kill a dog. The garments purchased were of the best quality and high priced."

Such danger can be easily avoided by wearing only woolen goods purchased from reliable makers, or undyed woolen underwear, such, for instance, as that made by the Jaeger system.

ADULTERATION OF SHERRY.

J. A. Hall, U. S. Consular Agent at Jerez de la Frontera, writes to the Department of State that large quantities of potato spirit are consumed in Spain in the "fortifying" of sherries, its cost being scarcely a third that of spirit of wine. Moreover, many dealers of former good standing consent to sell inferior wines of other localities under Jerez brands. The harmful effect of these practices upon the wine industry of the country has lead the chambers of commerce to urge the government to adopt preventive measures as regards the admission of the adulterant, and to establish laboratories at the principal ports of shipment where wines may be tested and their purity guaranteed.

CAPITAL TASTES.

WHAT BEVERAGES OUR STATESMEN DRINK.

The President and his official admirers are not a unit upon the drink question. Mr. Cleveland likes a glass of plebeian beer, but since his increasing stoutness he has used it in very moderate quantities. He has no love for the stronger drinks, and confines himself almost exclusively to malt liquors. Mrs. Cleveland is a strict temperance woman, and does not drink even the light wines. Secretary Bayard likes red wines, and a glass of good old Burgundy is his delight. The late Secretary Manning, like the President, was fond of malt liquors, with an occasional glass of light wines. Secretary Whitney's wine is champagne. He sips all the regular drinks on the table, but invariably saves himself for the champagne. Whitney has grown remarkably stout within the last few months. Certainly no man in the Cabinet has been so high a liver as he. Secretary Endicott treats his aristocratic stomach with a choice selection of old and rare wines. He is a connoisseur, and his judgment is probably second only to that of Justice Gray of the Supreme Court and Senator Hale, both of whom are experts. Both of these gentlemen, however, paled before President Arthur, of whom a celebrated wine merchant said: "He is the finest judge of Madeiras in the country, and his opinion upon other wines is almost as good." Ex-Secretary Lamar hasn't any particular liquor. He does not linger over the wine cup, neither does Secretary Vilas, but neither will shy a glass of rare vintage. Attorney-General Garland is fond of neither wine nor malt liquors. He drinks plain whiskey, with a very little water in it.—*Boston Traveller.*

WHICH BILL?—We are often amused at the statements made by persons whom we meet in regard to the Pure Food Bill. Nearly everyone says "of course, I am in favor of it; I want to see fraudulent goods driven out of the market." But when we ask them if they have read the bill, we find they are utterly ignorant of its provisions. By merely handing such persons a copy of the bill and calling attention to section 2, we have made many converts to the belief that the bill should not become a law in its present shape.—*Merchants' Review.*

VOLAPÜK.

A PRACTICAL COURSE OF SELF-INSTRUCTION IN THE UNIVERSAL LANGUAGE.

LESSON II.

ADVANTAGES OF VOLAPUK.

24.—Although very brief, Volapük is clear, plain, and distinct in its expressions, and as each expression has only *one* meaning, Volapük is easily learned. In fact, any person who knows his own language well, may learn, in one week, all the rul s of the new language, as there are no exceptions or irregularities whatever.

WORLD GRAMMAR (VOLAGLAMAT).

25.—The English language is the basis, or rather the guide, for Volapük, being the most widespread language of the present day.

26.—Like the Latin and the Russian languages, Volapük has no Articles; those found in its dictionary are used for literal translation only; thus the word *fat* means *father*, and *the father* as well as *a father*.

27.—If it is required to distinguish the sexes, the Noun itself shows the masculine, while the feminine is formed by placing the particle ji- (which has the same meaning and also the same pronunciation as the English "she") or the particle of- directly before the Noun, only kept distinct from it by a hyphen (-). The neuter gender is formed by affixing the particle os to the noun, without any mark.

28.—The plural of the neuter gender may be formed by writing ôss, or oz. Ex.—

this is good, atös binós guidik;
these (things) are good, atôss binôss (binoms) gudik; or, atoz b.noz gudik.

29.—In Volapük, vowels or consonants are not doubled, nor is it allowed to put many of them together; yet in the possessive singular and plural the second syllable is freely added to the word. Ex.—

vila*lib*, freedom of will;
vödas*buk*, dictionary, book of the words, vocabulary.

30.—To facilitate the pronunciation of children and old people, also for some Asiatic nations, Volapük often avoids the letters r, rr, ', h, c, ch, ng, th, jtj, etc.

31.—Compound words (vöds pekosiadol).

(1.) All compound words in Volapük take the *a* of the possessive *singular;* for example—householder, dom*a*kipel; dressmaker, klot*a*mekel, and not klot*as*mekel.

(2.) The possessive plural *as*, the adverbial *o*, or the mark for the accusative *i*, may be used, more clearly to denote the meaning of the word; or also to avoid ambiguity.

(3.) In any case it may be better not to use compounds, but rather to write:

Mekel klotas; meaning: maker of dresses, or klotas-mekel, meaning: of dresses the maker.

32.—The five hissing letters—(c, j, s, x, z,)—do not end words that can be conjugated, nor do they take the plural s, which would give an unnatural sound.

33.—In Volapük, nouns, as primitive words, are made monosyllabical if possible.

34.—Volapük has only one diminutive, that is, the additional *il*.

Ex.—dom, house; dom*il*, little, or small house.

35.—(1.) All adjectives, numeral words, and pronouns, are usually placed directly after their nouns; and in that case they are not inflected to indicate number or gender.

(2.) When used before, or without a noun, however, and also in poetry, and in such cases where clearness requires it, they must be changed, and take gender and number.

36.—The adverbs are the same as adjectives, and are placed after the verbs.

Should it be necessary to distinguish them from each other, the adjective, used as an adverb, takes as *o*, that is *iko*, to the primitive word.

Ex.:—Noun.	Adjective.	Adverb.
gud.	gud*ik*.	gud*iko*.
good(ness).	good.	well.

(In poetry this *o* may be added to all adverbs, even when not actually required by this rule.)

37.—(1.) The numerals, from 1 to 9 inclusive, never take the plural *s*.

(2.) The words, "the ones," "the twos," etc., are expressed as, the numbers one, the numbers two, etc., or as balel, telel, etc.

38.—All decimals take the plural *s*.

39.—Prepositions stand invariably before their nouns.

40.—The verb in Volapük, for all forms of conjugation, has always the same affixes for each of the different persons in singular and plural.

41.—All tenses (and persons) have their moods, particles, imperatives and subjunctives.

42.—Volapük uses only *one* negative, while two negatives make a positive.

43.—Conjunctions used to join clauses are never omitted.

44.—Capital letters are used only at the beginning of the names applied to the Deity, and of individual persons, places, etc.

45.—Volapük gives all freedom in syntax, but the usual arrangement of the parts in a sentence is thus:

Noun, pronoun, number, adjective; predicate (verb), adverb or preposition, with noun; extensions (4th, 2d, 3d case); principal clause, subordinate clauses.

46.—The dictionary shows that the greater part of words in Volapük are derived from the English, transforming those ending in s, z, or other hissing sounds. Of course much conformity with the German, French, Spanish and Latin languages may be observed.

47.—Polysyllabic primitives, beginning with pä, pe, pi, po, or pu, are used as little as possible, because they appear so much like the future tense of verbs. Rather use pö, pü, plä, pla, pli, or ba, bä, be.

48.—I. Suffixa (affixed syllables).

(1.) a, e and i stand with nouns.
(2.) u and ü " " adjectives.
(3.) o and ö " " pronouns, verbs, adverbs and interjections.

II. Præfixa (prefixed syllables) for verbs.

(1.) a, ai, and pa, pai—in the present tense.
(2.) ä, e, i, and pä, pe, pi—in the perfect tense.
(3.) o, u, and po, pu—in the future tense.

49.—Affixes and prefixes, formation of the plural (fomam plunuma).

(1.) The mark for the plural is the letter *s*. The plural of all words is formed by adding *s* to the singular.

Ex.— { bluk, brook; bel, mountain.
{ bluks, brooks; bels, mountains.
{ blod, brother; dom, house.
{ blods, brothers; doms, houses.

Form the plural of—
dog (dog), dlim (dream), dun (deed), fel (field), zib (food).

(2.) This rule, having no exceptions, shows to great advantage compared with the irregularities of the English language, as, for example, in

Man, men; box, boxes; child, children; sky, skies; knife, knives; foot, feet, etc., etc., etc.

50.—Formation of feminine nouns (fomam vödas jilik).

To mark a noun as feminine, the syllable *ji-* is prefixed to, but kept separate from, the primitive word.

Ex.—pul, the boy; ji-pul, the girl; son, the son; ji-son, the daughter; gok, the cock; ji-gok, the hen; blod, the brother; ji-blod, the sister; jeval, the horse; ji-jeval, the mare; stäg, the hart; ji-stäg, the roe; dünan, the man servant; ji-dünan, the maid servant; golad, the buck; ji-golad, the doe.

51.—To mark a word as neuter, the syllable *os* is affixed to it, and *not* kept distinct.

(To be continued.)

MALARIA.

NOT A POSITIVE POISON BUT A NEGATIVE POISONOUS CONDITION.

Dr. C. A. F. Lindormé in the *Medical Register*, denies the existence of any specific malarial poison, and sustains his position by pointing out that one of the pathological facts connected with the ailments attributed to malaria is intermittence, which could not be the case if it were a specific poison. The text books are very indistinct in their references to the causes of malarial poisoning. They state that the organic dangers mostly occur in the liver and spleen, they leave it an open question whether the pretended poison is chiefly inhaled by the lungs, taken up by the stomach, or, possibly, by the skin. The assertion that the cause of the so called malarial diseases may be found in emanations from disintegrating organic matter, vegetative, or what is worse, animal, is largely supported by pathological observation and therapeutical experience. It seems to exclude all skepticism as to its general authenticity. In attempting to substantiate the hypothesis which is offered in the title of this article, we need hesitate the less to make it our starting point, because it is precisely the foregoing fact which speaks in favor of our statement that malaria is not a positive specific poison, but a negatively poisonous condition.

The notable chemical substance which is prominent in miasmatic emanations is methane (CH^4) or marsh gas. This is, strictly speaking, no poison. Neither is it a dietetic substance. An emanation which is positively poisonous is carbonic oxide (CO) But this occurs in such minute quantities that we are scarcely justified in tracing pathological complications to it. The particular circumstances, however under which, as chemistry teaches, miasmatic emanations occur, substantiate the deleterious influence exerted by carbonic oxide, and, it may be of marsh gas or some other less known secondary substance. These circumstances are the very ones which our text books describe as existing in malarial districts; swamps and alluvial bottom lands are the prototypes. Pathology contented itself with the simple statement—chemical investigation laid bare the cause of the said condition—it is a comparative absence of oxygen which leads to putrid fermentation, and later to the formation of noxious compounds. (Samuel W. Johnson, M. A., Professor of Anal. and Agri. Chem. in the Sheff. Sc. School of Yale College, Ct.) It is not this circumstance in itself which refers to the pathological point. The carbonic oxide is in too trifling a quantity, the marsh gas too inoffensive, for either to exert an absolute influence on the etiology of malaria through the respiratory tract. The fact mentioned is more an agricultural than a biological one. But the further atmospherical condition linked to it is what speaks in favor of our hypothesis.

The text books state one of the essential conditions for the operation of the presumptive poison, malaria, is the stirring of the ground in turning up the sub-soil in the early cultivation of land, digging canals, building railways, and so forth. It is a chemical fact that carbon and hydrogen, the principal elementary constituents of miasmatic emanations, have an affinity for oxygen, and vice versa, as in case of stirring of the soil, sufficient to materially alter the even balance of the atmosphere in the hygienic proportion of its component gases. In consequence a deficiency of oxygen will ensue, which, absolutely trifling though it be, by giving room to the atomicity of the carbonic oxide, and possibly, even the marsh gas, will realize its relative importance, and produce the peculiar pathological condition which the text books describe as malarial poisoning. This explains among other pertinent facts, the observation made and referred to in the text books that, first, a higher stratum of air is comparatively free from malaria; second, in the more advanced stage of cultivation the malarial influence ceases. It is closest to the

ground where the absorption of oxygen by the carbon and hydrogen set free is overwhelming. On the other hand, the progress of oxidation by the cultivation of the land must put a stop to the formation of either CO or CH^4; the unhealthy putrid oxidation is transformed by wholesome eremacausis. ("How Crops Feed," by S. Johnson, pp. 290 and 291.)

The carbonic oxide poisoning in malaria is, as a matter of course, a chronic one. But its conditions correspond with those of acute cases, inasmuch as in these an excess of free oxygen renders the poison innocuous, so that it is more the absence of oxygen than the presence of carbonic oxide which must be called the cause of the disease. The difference between chronic malarial poisoning and an acute poisoning by, e. g., the emanation from a coal fire or gas pipe, is sufficiently explained by the difference in the acting quantity, which in acute cases may be very considerable, and in cases of malaria in a given space of time, analytically, hardly perceptible.

The pathological lesions caused correspond with this difference in the effectiveness of the poisonous influence. In acute cases the deprivation of oxygen is so considerable that it is in the lungs where the mischief is being perpetrated; the pathological lesion in acute cases of deprivation of oxygen is almost a mechanical one—a mere choking. In the chronic form of malarial poisoning the pathological lesion is one of protracted influence, and the organs exposed to it are naturally those which constitutionally, or by way of their organic function, resent most a deficiency of oxygen.

SLEEP.

POSITIONS THAT AFFECT THE SLEEPER'S COMFORT.

According to Dr. Granville the position affects sleep.

A constrained position generally prevents repose, while a comfortable one wooes sleep.

He says:

"Lying flat on the back, with the limbs relaxed, would seem to secure the greatest amount of rest for the muscular system.

"This is the position assumed in the most exhausting diseases, and it is generally hailed as a token of revival when a patient voluntarily turns on the side; but there are several disadvantages in the supine posture which impair or embarrass sleep.

"Thus in weakly states of the heart and blood-vessels and certain morbid conditions of the brain, the blood seems to gravitate to the back of the head and to produce troublesome dreams.

"In persons who habitually, in their gait or work, stoop, there is probably some distress consequent on straightening the spine.

"Those who have contracted chests, especially persons who have had pleurisy and retain adhesions of the lungs, do not sleep well on the back.

"Nearly all who are inclined to snore do so in that position because the palate and uvula hang on the tongue, and that organ falls back so as to partly close the top of the wind-pipe.

"It is better, therefore, to lie on the side, and in the absence of special diseases rendering it desirable to lie on the weak side, so as to leave the healthy lung free to expand, it is well to use the right side, because when the body is thus placed the food gravitates more easily out of the stomach into the intestines, and the weight of the stomach does not compress the upper portion of the intestines.

"A glance at any plate of the visceral anatomy will show how this must be.

"Many persons are deaf in one ear and prefer to lie on a particular side; but, if possible, the right side should be chosen.

"Again, sleeping with the arms thrown over the head is to be deprecated; but this position is often assumed during sleep, because circulation is then free in the extremities, and the head and neck and muscles of the chest are drawn up and fixed by the shoulders, and thus the expansion of the thorax is easy.

"The chief objections to these positions are that they create a tendency to cramp and cold in the arms, and sometimes seem to cause headaches during sleep and dreams.

"These small matters often make or mar comfort in sleeping."

WINES.

THEIR CHARACTERISTICS AND THEIR ADULTERATIONS.

BY FRANCIS WYATT, PH. D.

That ours is essentially an age of adulteration is a fact so generally admitted as to preclude discussion, and so widely known that we have come to look with scepticism upon almost everything that is served up to us as food and drink. Nor must we, in this sweeping statement, be understood to include what are called "food substitutes," for, with the growth and increasing wants of a civilized community, the development of its education and scientific knowledge, we may rationally expect that men will gradually cast off sufficient of their prejudices to recognize, that when a wholesome substance is either naturally found or artificially made, possessing all the beneficial qualities of a well-established, and necessary, but at the same time rare and costly staple, it should be promptly accepted and introduced, and that the poorer classes should be persuaded by precept and example to join in its general adoption. Indeed, we may go the length of asserting that the discoverer of food substitutes, which can stand the test of scientific investigation and come out unscathed, is rightly considered in the light of a public benefactor, when he frankly and honestly lays his invention before us, offers it for our approval on its intrinsic merits, and relies upon these alone for a favorable verdict. Unfortunately for our progress, mankind is nothing if not perverse, and, as we constantly see, such benefactors meet with but little recompense or gratitude from those for whose special benefit their inventions are designed. The poor, either from prejudice or sheer ignorance, are usually restrained from trying them or enjoying the good they might confer. Hence, where we might have pure food, we have adulteration stalking abroad among us; so powerful for evil, so generally fostered and supported in the highest places, so subtle and insidious in its dealings, that the strong arm of the law is taxed to its utmost in its attempts to keep it within those limits, beyond which, if allowed full sway, it would rapidly spread death and desolation.

As our case now stands, we find men growing more and more unscrupulous; less and less inclined to think of ought save the profit of the hour; and, as an inevitable result, it follows that we are able to trace back to adulteration a large majority of the ills from which we suffer, and to which we are not naturally heirs. We all know of its presence; we all labor under an increasing sense of uncertainty; we are sometimes roused to make feeble, and generally futile, efforts to escape from its thralls; we try to persuade ourselves that there are, that there must be, some honest dealers left in the world; we argue that foremost amongst these are to be found our own particular caterers who would sell us nothing unable to bear the strictest scrutiny and the severest test, our very confidence prevents this scrutiny from being exercised, the tests are never made, and, with a strong disinclination to be too inquisitive and cavil with our food, we eat and drink what is provided and endeavor to be thankful. What better comment on this detestable, but common weakness, has ever been made than the following familiar passage in the life of a well known practical philosopher?

"Weal pie," said Mr. Weller, soliloquizing, as he arranged the eatables on the grass, "wery good thing is a weal pie when you know the lady as made it, and is quite sure it ain't kittens; and arter all, though, where's the odds, when they are so like meat that the very piemen themselves don't know the difference?"

"Don't they Sam?" said Mr. Pickwick.

"Not they, sir," replied Mr. Weller, touching his hat. "I lodged in the same house as a pieman once, sir, and a wery nice man he was—reg'lar clever chap too—make pies out o' anything, he could. 'What a number o' cats you keep Mr. Brooks,' says I, when I'd got intimate with him. 'Ah,' says he, 'I do—a good many,' says he. 'You must be very fond o' cats,' says I. 'Other people is,' says he, a-winking at me; 'they ain't in season till the winter, though,' says he. 'Not in season!' says I. 'No,' says he, 'fruits is in, cats is out.' 'Why, what do you mean?' says I. 'Mean!' says he, 'that I'll never be a party to the combination of the butchers to keep up the prices o' meat,' says he. 'Mr. Weller,' says he, squeezing my hand wery hard, and vispering in my ear, 'don't mention this 'ere again, but *it's the seasonin' as does it.* They're all made o' them noble animals,' says he, a pointin' to a wery nice little tabby kitten, 'and I seasons 'em for beefsteak, weal, or kidney, 'cordin to the demand; and more than that,' says he, 'I can make a weal a beefsteak, or a beefsteak a kidney, or any one on 'em a mutton, at a minute's notice, just as the market changes, or appetites wary!'"

The whole situation is summed up in that one sentence, "it's the seasonin' as does it!" Is it not a humiliating fact, that so long as a thing "tastes good," it matters very little to us of what it is made; what may be its true character; whether it be natural and pure, clean and wholesome, or whether it be mixed and compounded by the aid of ingredients the very reverse of all this? Our palate is flattered; our senses are deceived, and we are satisfied! It is axiomatic that in all primitive communities the organs of vision, taste, and smell are man's chief reliance in the choice of his food. The tongue, for example, is so constructed that upon careful examination we find its surface covered with tiny projections, known as papillæ, connected with a series of nerves that confer upon us the gifts of taste and of touch. These nerves, however, despite their immense utility, would be of little value in the absence of our sense of smell, since there are a large number of foods which, had we not a nose, would be undistinguishable by taste alone. The olfactory nerve is, therefore, indispensable to our comfort and well-being, and it passes directly from the brain into the nose by a number of tiny branches, through a little sieve-like bone that covers the upper part of its cavity. In the lower animals, and in the savage, this sense is much more acute than it is in cultivated and highly civilized races, and they have an extraordinary power of detecting the odoriferous particles of matter. Hence we conclude that as we develop our intellectual faculties, knowledge replaces, in a very great measure, the mere instinct in determining what is good and what is bad for us, it being evident that we cannot advance in wisdom in one direction only. Thus, for example, in learning that the principal ingredients of our food are composed of carbon, hydrogen, oxygen, and nitrogen, in varying proportions and in varying forms, we have also learned that prominent among these ingredients are certain bodies which possess peculiar characteristics of savor and odor.

These odoriferous bodies belong to a series that have been designated essential oils and ethers, and being extremely volatile, they readily diffuse their aroma throughout any atmosphere in which they are set free. The common ether of commerce with which we are familiar and which may serve us as a type of this class of bodies, is an essence derived from alcohol, which latter, as we know, results from the decomposition of sugar. Now, grape sugar is composed of six parts of carbon, twelve parts of hydrogen, and six parts of oxygen (in reality *charcoal* and *water*), while alcohol, which is substantially the base of all perfumes, is composed of four parts of carbon, six parts of hydrogen, and two parts of

oxygen, the atoms of its double molecule being so arranged that two parts of the hydrogen and one part of the oxygen are combined in it as water. This water being extracted, a substance remains which is scientifically known as the oxide of ethyl, or ether, identical in composition with coal gas, and possessing the property of allying itself with acids to form sulphates, tartrates, citrates, etc.

Innumerable species of essential oils and ethers, differing in their properties as well as in flavor and smell, have been brought to light by the modern researches of organic chemistry, and, the science being still in its infancy, we may confidently anticipate the discovery of many thousands more, the main result of the operations that have led to their dissociation from organic bodies having, however, so far been, that by dint of much thought and study we can now reassociate—or to speak more correctly—*create them*, by bringing together, in proper proportion, and at the proper temperature, the elements of which they are composed, *without the intervention of any natural plant or fruit.* It follows hence that we may deceive the sense of smell in a hundred ways. By expressing the bitter almond we obtain from it a volatile oil of so extremely agreeable an odor that it is commonly used by cooks and confectioners for flavoring purposes. A chemical process enables us to produce an exactly similar oil from such dissimilar sources as coal tar and the hippuric acid found in the drainings from our cow-sheds and pig-styes. Again, the odor of the jargonelle pear is imitated beyond detection by the keenest nose, by distilling the fousel oil—obtained from the decomposition of potato starch—with acetate of sodium and oil of vitriol; that of apples, by distilling the same oil with sulphuric acid and dichromate of potassium; or that of pineapples, by distilling rancid butter with potash and alcohol. In the case of taste, it is no less easy to practice deception, notably by such substances as saccharine—an extremely sweet principle lately eliminated from coal tar—or by glucose, a sugar artificially prepared from starch, and now almost as much used for sweetening purposes as the natural juice of the cane. But it is useless to go on quoting examples that might be multiplied *ad infinitum*, to demonstrate the progress of synthetical chemistry; it is sufficient for our purpose to say that all these artificial products are so exactly similar in composition to those found in nature, that it is difficult, if not impossible, to distinguish between them by any means yet known to us. They are made up of the same elements, in the same proportion, appear to possess the same chemical properties, and, as in the case of alizarine, purpurine, and indigo, synthetically coincide with their analyses. Despite all this we cannot admit that they are really the same, we cannot conceive that there should not be a vast difference between what we have been taught to call organic matter—which is subject to the same laws, so far as composition is concerned, as the bodies we call inorganic or mineral—and the organized matters which constitute the vessels and form part and parcel of the life of moving things. The protoplasm contained in the animal or vegetable cells must be very different from the same matter after the organism has ceased to exist, and it is incredible that any substance that is artificial, should have the intrinsic virtue of those which are created in a living thing, by a vital process, of which our knowledge is elementary, which we cannot properly understand, and which, even if we admit the whole theory of evolution, we have no hope of ever being able to do more than imitate.

With science in this unsettled and uncertain state, how can we wonder at the difficulties which beset us in our endeavors to deal satisfactorily with the problems connected with pure food and pure drink? Can we ever hope to effectually deal with them at all, are we not wasting valuable time, might we not be more successful if, setting aside all minor questions, we were to at once draw a well-defined line, dividing that branch of chemistry which provides us with justifiable *food substitutes*, and that which merely facilitates the growth, and ensures the impunity of *adulteration*, in the interest of illegitimate profit or dishonest competition? Might we not, by means of such a line, encourage the one and vigorously prosecute and punish the other? Does not our future welfare, and that of our friends and children, depend upon the adoption of some such course? Unfortunately for our philosophy, there is a prevalent disinclination throughout the world to "call a spade, a spade;" it is even asserted that we take some measure of pleasure in the thought of being swindled, and there can be no doubting our constant efforts to deceive ourselves. If an adventurous and ingenuous pieman should one day open a store on Broadway, and blandly say to his patrons, "Here is a new kind of pie, it contains young kittens, but is so admirably seasoned with choice spices that its taste is identical with veal," would he find any purchasers? Would he not be howled down by an outraged society, and would not his wares be soon bundled into the gutter? Across the way he has a competitor (an *ingenious* pieman, this,) who makes exactly the same pies, but calls them veal. Should we not buy these? would they not exactly suit our taste and requirements? We turn with loathing from oleomargarine as such, despite its wholesomeness and cheapness, but our intelligent grocer sends it to us as a gilt-edged butter, and by so doing at once earns our warm esteem and a hundred per cent. profit. It is always the same old story, told and retold *ad nauseam*, "if there were a little less folly there would soon be less rascality." There may be small hope that dishonesty will ever entirely disappear, but while admitting this, and regretting it, we may be certain that it could be held in proper check if we would but train ourselves to abandon ridiculous and old-fashioned prejudices in favor of certain visionary superiorities; to see all things as they are, and not as we would have them be; to ascertain the real value of essential commodities, and to understand the impossibility of acquiring them for less than their market price. "*Thou shalt not adulterate*," must be supplemented by the words, "*because it does not pay*," before we can rely upon getting pure articles of food and drink in the proper acceptation of those terms. At the present time, as we said at the commencement, adulteration is the rule, and we venture to say, without fear of contradiction from the well informed, that there is no article of consumption in which more ingenuity is displayed than there is in the falsifying, mixing, or "doctoring" of wines; and we now come directly to the subject of these essays. Although it is generally assumed that we are destined in the near future to become the greatest wine growers, and that, as such, we shall supply the rest of the world from our boundless stores, we are shown by our official statistics to be not, by any means, a nation of wine drinkers; for, while the consumption of beers reaches the considerable figure of 12½ gallons per year and per head of our entire population, that of every description of domestic and imported wines does not exceed three pints. Thus, using round figures, we consumed in 1887, 25,000,000 gallons of wine, of which only about one-fifth came to us from foreign sources, the rest being produced at home. The bearing of these figures upon the arguments we have used and the illustrations we have given, must be immediately apparent. They conclusively show that wine has not yet become a popular beverage, but remains an *article de luxe*, reserved for the healthy, the refined, and the extravagant. The vast majority of those who drink it eschew American brands, and are slaves to a foreign name and a foreign label. They boast of their well-furnished cellars, pose as *connoisseurs* of sound liquor, and willingly pay high prices for what they are led to look upon as the finest *crus* of the best vineyards of France, Italy and Spain. Now, as the figures we have quoted are compiled by disinterested government employés for revenue purposes, and are consequently reliable, we can only infer that, since four-fifths of the wine we consume is grown on our own lands, a large proportion of what we buy under a foreign brand is, as a matter of fact, our own product, doctored up to suit our misguided and vitiated taste, and to satisfy our unreasoning prejudices. Hence it follows, that in place of enjoying a sound and wholesome, because natural, wine straight from the wine press, as it were, we are giving preference to some artful, perhaps deleterious, mixture, and playing into the hands of unscrupulous rogues who amass large fortunes, by exploiting our gullibility. Is not this another case of "veal pie?" Is it not the attractive label, the well-known name, and "the seasonin' as does it?"

(*To be continued.*)

FAITH CURE.

THE IMAGINATION A POTENT INSTRUMENT, IF RIGHTLY HANDLED.

It is a pitiful fact that no great scientific discovery, which is apparently simple in its application to the uses of medicine, has escaped the opprobrious patronage of quacks. So electricity, massage, rest treatment, and the so-called mind and faith cures have, in many instances, been brought almost into bad repute by the precipitate practice and extravagant claims of the charlatan. This is notably so in the case of cures by the imagination, which a physician of good standing hardly dare report without danger to his reputation and practice. For years the profession has smiled indulgently on the administration of placebos, which is a mind cure in the form of pills (but that is *entre nous*, and for goodness sake don't let it get out!) The human mind is constituted so peculiarly that the physician's whole work is done sometimes when he makes an impression. Students of medicine are familiar with all the famous instances of the effects of imagination on the body. People have literally worked themselves into all manner of diseases by fancying themselves subject to the same, or in danger of infection. Why should they not also work themselves out? We have cases on record where fancy has bleached the hair, induced insanity, and even death. Yet, with such a power under our hands, we have often resorted to the more feeble agency of drugs. We have not learned what we should from the effects of voudooing, pow-wowing and exorcism. There are conditions of disease when a mental impression is the only curative agent within our power. The New York *Evening Telegram* of October 10, 1887, reports a prominent physician as having effected a notable cure by imagination. The patient was a woman, who suffered so from pleurisy that a hypodermic injection of morphine was necessary to induce her to sleep. This did her so much good that she asked for a repetition of the dose. By chance, the physician found himself without any morphine, but he contrived secretly to fill the empty bottle with water, which he injected with great care and sobriety. The patient succumbed to the fancied effect in ten minutes, and fell fast asleep. Moreover, the symptoms of pleurisy vanished completely under this imaginary influence, and the patient recovered. It is, of course, not every mind that can be tricked in this way; but the vast majority of people are susceptible, under some morbid condition, to such impressions. It takes a skillful man to play such tricks and avoid detection; but we cannot help admitting that there are many cases where cures by the imagination are infinitely more justifiable than the wholesale gorging with drugs which cannot meet the emergency. A recent account in the New Haven *News* says that a reliable physician in Danbury had a patient who had not spoken for two years, being utterly unable to say a word. There was no apparent physical cause for this sudden, protracted bereavement of speech, and the doctor attributed it to an inert will-power. Many other physicians had treated her unsuccessfully, but he was the first to discover, through written conversations, that she believed in miraculous cures. "He concluded," says the *News*, "to try the effect of a little mummery on her. Accordingly, one morning when visiting her, he sat

down by a table and leaned his head down upon his hands for some five minutes without speaking, as if in wrapt meditation. He suddenly jumped up and told the woman that he was now right, that he was going to cure her on a certain day. He then gave her minute directions in respect to it. He told her that on the day he should come to the house at 10 A. M.; that he should first give three raps on the window, and then he should go to the front door and give two raps; that when the door opened he would be found standing with both hands upon the door post and his head leaning upon them; that the door to her room must be opened wide, and that he would walk in with measured tread; and when he got to her bedside he should say, 'Good morning,' and that she would answer in reply, 'Good morning, doctor.' On the appointed day he did just as he said he should do, and when he said 'Good morning' to her, she promptly made the reply, 'Good morning, doctor,' in a loud, strong voice. She seemed utterly astonished herself, but said she felt that what the doctor said would be true, and firmly believed that he had wrought a miracle in her cure."—*Medical News.*

BLOOD POISONS.

WHAT THEY ARE AND HOW CAUSED.

It was noticed long ago that if a small portion of decaying animal flesh be introduced into the blood of another animal, in many cases a disease was produced which was always very serious and often fatal in character. The butcher and the surgeon were notably liable to danger from such diseases. They were summed up in the latter part of the present century under the general term of blood poisoning and the unknown substance or thing which caused the disorder was called, for lack of better knowledge, a blood poison. In the past ten years the chemist, microscopist and pathologist have devoted much time and attention to the topic, and have discovered a long series of interesting facts. Although these have been classified and brought into a tolerably good system, yet they have not as yet been sufficiently determined and defined to place them in the category of scientific truths. As a result three theories are advanced and plausibly advocated, each and all of which explain the phenomena of which they treat. It has been found that nearly all nitrogenous organic substances, more especially the so-called proteids or flesh-formers of physiologic chemistry undergo a putrefaction when exposed to a germ-laden air in which at one stage they produce a secondary compound of peculiar properties. This compound resembles albumen in many particulars. When produced under normal circumstances, it is accompanied by vast numbers of the lowest forms of life, forms which for lack of more definite names are classified under the general heads of bacilli and bacteria. If a small fragment of this secondary nitrogenous compound, infested with bacilli, be introduced into the circulatory system of an animal, blood poisoning ensues. Up to this point, all authorities agree. Beyond this they break into three sections, each with a pet theory. One of these holds that the secondary compound acts as a poison, either directly upon the brain or pneumogastric ganglia, or indirectly by initiating an analogous decomposition or putrefaction of the blood. A second holds that the bacilli which swarm within the compound are the destructive agents and act by immediate and immeasurable reproduction within the blood. A third holds that both the secondary compound and its characteristic bacilli act together as lethal agencies. The prevailing consensus of scientific inquirers is in favor of the third theory, and like all theories which take a middle course rather than an extreme, it promises to be eventually the only accepted one. The rule which all these investigations declare to be imperative to human health is, avoid all decomposing nitrogenous substances and remove or destroy them as soon as possible. Of the familiar substances which during putrefaction produce these blood poisons may be mentioned decaying cheese and putrid cream, spoiled meat, game, eggs, fish and shell fish. These should be burned or buried and should not be touched by the hands. After throwing them away, the hands should be immediately washed in lukewarm water, and if possible with carbolic soap or some other bacillicide. Soiled linen and table-wear should be consigned to the laundry at the earliest convenience. Garments or cloths worn by sick or wounded people, and those worn by persons who perspire freely should never be allowed to lie around as they usually do, but should be immediately covered with boiling water. Wounds, which secrete pus or matter and all diseases which are marked by offensive discharges should be viewed as possible sources of blood poisoning. When it is possible the sick parts should be bathed with warm water and all bandages should be changed as frequently as the circumstances will permit. The precautions recommended will, if obeyed, reduce the chances of blood poisoning to so small a percentage as to be practically nil. They will also increase the health, neatness, beauty and comfort of the individual. To the careless observer they may seem to involve needless trouble and labor, but to him who regards the body as the temple of God and to whom life is sacred and health and strength the greatest treasures of existence, they represent and embody the highest wisdom of modern science.

ANILINE COLORS.

HOW, AND OF WHAT, THEY ARE MADE.

Every one has seen and worn fabrics dyed with the brilliant aniline colors, but few are acquainted with the process of their manufacture, or understand how, from so unpromising a liquid as coal tar, a substance offensive to almost every sense, such a variety of beautiful dye stuffs can be made at a cost far below those formerly used. When bituminous coal is heated in retorts as in gas making, among other substances a black, dirty, ill-smelling liquid is produced, known as coal tar. From this, numerous chemical compounds can be obtained; but the principal ones concerned in the manufacture of aniline are two liquid hydrocarbons, known as benzole (C_6H_6) and toluole (C_7H_8). These are obtained mixed together by distilling the coal tar; but, for the sake of clearness, we will consider the benzole alone, it being understood that the toluole which is mixed with it undergoes similar reactions in all subsequent processes. The first treatment which the benzole undergoes is a change to nitro-benzole ($C_6H_5NO_2$) by the action of a mixture of nitric and sulphuric acids. This change is analagous to that of glycerine into nitro-glycerine, but the nitro-benzole is not explosive. It is an oily liquid, with a powerful odor of bitter almonds, and is used extensively in perfumery under the name of essence of mirbane. It is also used in flavoring extracts for food, but its highly poisonous properties render this a very dangerous practice. By the action of reducing agents the oxygen of the nitro-benzole is replaced by hydrogen, and we obtain aniline ($C_6H_5NH_2$). Various methods are used commercially for this reduction, but the action of nascent hydrogen, formed by the action of acetic acid upon iron filings, is one of the most practical. The filings and acid are added to the nitro-benzole, and the whole stirred together till the reaction is finished. The crude aniline oil resulting from this process, which is essentially a mixture of aniline, toluidine and pseudo-toluidine, is a regular article of commerce, and the base from which all the various colors are made. Aniline red, otherwise known as magenta or fuchsine, was one of first colors discovered, and is a salt of a base known as rosaniline, usually the chloride or acetate. Rosaniline itself ($C_{20}H_{19}N_3$) is colorless, but the salts mentioned above have the well known red color. Rosaniline is formed from aniline oil by a process of oxidation. The oxidizing agent most commonly used is arsenic acid, although its poisonous nature renders it somewhat unsuitable for this purpose. All but a trace is removed from the finished product, but enough is frequently left to produce distinctly poisonous symptoms in persons wearing garments dyed with this substance. The following is the reaction expressed by chemical symbols:

Aniline oil. Arsenic acid.

$$2C_{20}H_{25}N_3 + 3As_2O_5 =$$

Rosaniline. Arsenious acid. Water.

$$2C_{20}H_{19}N_3 + 3As_2O_2 + 6H_2O.$$

A ton of coal gives about sixty pounds of tar, from which about 3.37 per cent. of crude aniline red, or 1.12 per cent. of pure fuchsine, can be obtained. Practically, about one and a half tons of coal are required to make a single pound of fuchsine, but the pound of fuchsine possesses such a high coloring power that it will dye two hundred pounds of wool. Taking rosaniline as a basis, most of the other colors are prepared by the action upon it of various chemical reagents. The symbols of these dyes are quite complex, and of interest only from a theoretical point of view. By the action of bichromate of potash and sulphuric acid upon rosaniline we obtain aniline violet. By heating fuchsine and aniline oil together, and treating the product with hydrochloric acid, aniline blue is formed. Aniline greens are formed by the addition of sulphur or iodine. Aniline yellow is formed by the action of nitrous acid upon an alcoholic solution of rosaniline. Aniline black is really a very deep green formed by the action of oxidizing agents upon aniline oil. It is of special interest from the method of its manufacture, a minute proportion of a salt of the rare metal vanadium being added to a solution of aniline chloride. The vanadium appears to be alternately oxidized by the air, and reduced by the aniline, thus acting as a carrier of oxygen from the air to the aniline. A very small amount of vanadium will transform a large quantity of aniline chloride into aniline black, and the process is curiously analagous to fermentation. Like most substances containing nitrogen, the aniline colors are very unstable, and their complex molecules constantly tend to break up into simple forms. It is this tendency which causes them to fade so rapidly upon exposure, and renders them unsuitable for use where a permanent and lasting dye is required. It is a very curious fact that this group of organic chemical substances, all related to each other, should be characterized by such a variety of brilliant colors, but it is not more strange than that, in the inorganic world, the salts of the metal chromium should show this same variety of color, or that the salts of glucinium should have a sweet taste, or the compounds of selenium or sulphur an offensive smell. It would seem as if, in any molecule, certain atoms or radicals had a dominating influence over the others, and imparted their peculiar qualities to the whole group. Why this is so, is as yet an unsolved problem, but we have little doubt that, before many years have passed, the key will be found by some of the many students of chemical philosophy who are patiently working upon this very question.—*Popular Science News.*

THE ART OF DINING.

MURRAY'S RULES FOR DINNER TABLE ENJOYMENT.

1. Let not the number of the company exceed twelve, that the conversation may be constantly general.

2. Let them be so selected that their occupations shall be varied, their tastes analogous, and with such points of contact that there shall be no necessity for the odious formality of presentations.

3. Let the eating-room be luxuriously lighted, the cloth remarkably clean, and the atmosphere at the temperature at from thirteen to sixteen degrees of Réaumur.

4. Let the men be *spirituels* without pretension—the women pleasant without too much coquetry. [Hard to accomplish.—*Ed.*]

5. Let the dishes be exceedingly choice, but limited in number, and the wines of the first quality, each in its degree.

6. Let the order of progression be, for the first (the dishes), from the most substantial to the lightest; and for the second (the wines), from the simplest to the most perfumed [rather opposed to Walker's ideas].

7. Let the act of consumption be deliberate, the dinner being the last business of the day; and let the guests consider themselves as travelers who are to arrive together at the same place of destination.

8. Let the coffee be hot, and the liqueurs chosen by the master.

9. Let the saloon be large enough to admit of a game of cards for those who cannot do without it, and so that there may notwithstanding remain space for post-meridian colloquy.

10. Let the party be detained by the charms of society, and animated by the hope that the evening will not pass without some ulterior enjoyment.

11. Let the tea be not too strong; let the toast be scientifically buttered, and the punch carefully prepared.

12. Let not the retreat commence before eleven, but let everybody be in bed by twelve.

If anyone has been present at a party uniting these twelve requisites, he may boast of having been present at his own apotheosis.

MIRROR

HOW LOOKING GLASSES ARE MADE.

One of the factories in Chicago employs some 150 men and boys, and its spacious four floors present an interesting series of sights to the visitors whose nerves are steel and tympani proof against splitting. On the first floor he will see huge stacks and piles of glass in assorted sizes, ranging from sixteen feet by seven feet square down to the smallest ovals for mirrors. These are all polished, some being run over huge felt-covered wheels, kept powdered with rouge, and the larger sheets scrubbed by sweating toilers with hand blocks covered with felt, like a printer's proof planer, in rouge. After the glass is thoroughly polished it is taken up to the next floor, where it is laid on tables and cut into the sizes ordered. It then passes into the hands of the bevellers, who, with sand and water, and large grindstones, artistically finish the edges of the glass. It takes a trip upward again, to another floor, and is once more put through a polishing process, to remove any scratches or blemishes that may be on the glass. After every spot or scratch, no matter how minute, has been removed, careful hands convey the now beautiful and sparkling glass to the room where it goes through the final process, the silvering. Huge tables of cast iron or stone, made like billiard tables, with raised edges, are used in the silvering room. These tables are of great strength and solidity, and all around the edges is a drain, for the superfluous mercury is poured over the tables in quantities sufficent to float the glass, which, after being tinfoiled, is gently and carefully pushed across the table containing the mercury. Great care must be used to prevent blemishes, the least speck of dust being ruinous to the mirror. Mercury, like molten lead, is always covered with a dirty-looking scum, which cannot be removed by skimming. The least bit of this scum would spoil the mirror, so the difficulty is obviated by shoving the scum along with the edge of the glass. After successfully floating the glass on the mercury, a woolen cloth is spread over the whole surface and square iron weights are applied until the whole presents a compact mass of iron, two or three pounds to the square inch. After this pressure has been confined for ten or twelve hours the weights are removed and the glass placed upon another table of wood with a slightly inclined top. The inclination is gradually increased until the unamalgamated quicksilver has drained away and only the perfect amalgam remains, coating the glass and perfectly adherent. This ends the process, and the erstwhile rough piece of plate glass emerges from the silvering room a gorgeous mirror.—*Western Manufacturer.*

REVIEWS OF NEW BOOKS.

HANDBOOK OF TREATMENT. Arranged as an alphabetical index of diseases, to facilitate reference, and containing nearly one thousand formulæ. By William Aitken, M.D. (Edinburgh), F.R.S. New York, E. B. Treat.

This is the third volume of the valuable series of Treat's Medical Classics, and, like its predecessors, it is thoroughly practical, comprehensive and clear. It comprises a list of diseases, alphabetically arranged, so that any desired subject can be referred to without the use of an index. Under each heading is a short definition of the disease, succeeded by advice as to treatment. It is a library in a nutshell, and should find a place in the library of every medical practitioner.

PAMPHLETS, ETC., RECEIVED.

THE NEW YORK OBSERVER. This old standard publication comes to us with No. 1 of Vol. 64, having a new and improved dress in the shape of a very distinct font of type. It is as full of the best reading, select, sound and varied, as it ever has been, which has made the *Observer* the favorite weekly among the many religious publications, non-political, undenominational and truly independent. Long may it continue to amuse, instruct and guide its numerous readers.

DOMESTIC DIETETICS.

SEASONABLE FOOD.

January.

MEATS.—Beef, tongue, mutton, pork, venison, ham, kidneys, sausages, liver.

GAME AND POULTRY.—Grouse, hare, pigeon, quail, rabbit, chicken, duck, goose, turkey.

FISH.—Anchovy, bass, bream, carp, chub, cod, eel, crab, flounder, halibut, herring, lobster, mackerel, mussels, oysters, perch, pike, rock bass, rock fish, salmon, smelt, sturgeon, whitefish.

VEGETABLES.—Artichokes, Brussels sprouts, beans, cabbage, carrots, celery, corn, eschalots, garlic, lettuce, onions, parsley, parsnips, potatoes, savory, shallots, spinach, squash, tomatoes, turnips.

FRUITS.—Apples, oranges, bananas.

PRACTICAL RECIPES.

GIBLET SOUP.—Scald and clean thoroughly two sets of goose giblets, or twice the number of duck giblets, cut them in pieces, and put them in three quarts of stock; if water is used instead of stock add a pound of gravy beef, a bunch of sweet herbs, a couple of onions, half a tablespoonful of the whole white pepper, as much salt, and the peel of half a lemon; cover all with water, then stew, and when the gizzards are tender strain the soup. Now put into a stewpan a paste made of an ounce of butter and a spoonful of flour, stir it over the fire until brown, pour in the soup, and let it boil, stirring it well all the while; in ten minutes skim and strain it, add a glass of Madeira, a saltspoonful of cayenne, a dessertspoonful of mushroom catchup, squeeze in the juice of half a lemon, and serve up with the giblets in the soup; it should be sent to table as hot as possible.

BREAST OF VEAL BOILED.—Put it into plenty of cold water, and let it come to a boil, clearing the scum as often as it rises; when it boils, add a bunch of parsley, a few blades of mace, a small bunch of sweet herbs, twenty or thirty white peppers, and let it stew an hour and a quarter, then send to table with a nice piece of bacon, and parsley and butter.

MUSHROOM PIE.—Pare and slice three Spanish onions; pare, wash, and slice six moderate sized potatoes; wash and chop a little parsley. Put the above into a pan with a quart of water, add one-quarter pound of butter, and boil gently for one and one-half hours. While above is boiling, pare one pound of mushrooms, cut them into moderate thin slices (sideways) and put into the pan; add pepper and salt to taste; then let the whole simmer for a quarter of an hour; then mix a tablespoonful of flour with milk, and add; stir until the whole boils; then pour into a good sized pie dish; cover with paste, and bake in a moderate oven; as soon as the paste is baked the pie is ready. The above may be prepared a day before it is wanted and made hot when required.

COCOANUT CAKES.—One cupful of cerealine flakes, two cupfuls of sugar, six eggs, one and one-quarter cupfuls of flour, three-quarters of a cupful of butter, one teaspoonful of Horsford's baking powder, three-quarters of a cupful of milk. Rub the butter and sugar to a light white cream. Add the eggs (two at a time), beating three or four minutes between each addition of eggs. Sift the flour and baking powder together, and add to the butter, cerealine flakes and milk. Mix into a rather thin batter and bake in jelly-cake tins, well-greased, in a hot oven. When cold, spread pastry cream, and ice the top with clear icing.

WASHINGTON PIE.—One cupful of sugar, one-half cupful butter, one-half cupful sweet milk, one-half cupful flour, one egg, one teaspoonful of cream tartar, one-half teaspoonful soda; flavor with extract of lemon. Put on dinner plates; spread with apple sauce between each layer.

DAYTON CAKE.—Five eggs, five cups of flour, three cups of sugar, one and one-half cups of butter, one cup of water, two teaspoonfuls of Horsford's baking powder, a little salt. Flavor with lemon.

DRESSING FOR SANDWICHES.—One-half pound of nice butter, two tablespoonfuls of mixed mustard, three tablespoonfuls of salad oil, a little red or white pepper, a little salt, yolk of one egg; rub the butter to a cream, add the other ingredients and mix thoroughly, set away to cool; spread the bread with this mixture and put in the ham, chopped fine.

WHOPOVERS.—Mix two heaping cups sifted flour with one heaping teaspoonful Horsford's baking powder; then add two eggs, one large spoonful of sugar, a piece of butter as large as a walnut, two cups of sweet milk, a little nutmeg and salt; melt the butter. Bake in cups in a quick oven.

MACAROON CHEESE CAKES.—Take one quart of tepid milk, a little rennet, two ounces of butter, three eggs, a little grated nutmeg, one ounce of pulverized sugar, two ounces of macaroons, half a wineglass of brandy, and puff paste. Turn the quart of milk to a curd with a little rennet, beat it smooth, and drain it in a muslin cloth or on a hair sieve. When well drained from the whey, add two ounces of melted butter, three well beaten eggs, one ounce of pulverized sugar, the brandy, and two ounces of crushed macaroons. Mix all well together. Line some patty pans with puff paste, pour in the mixture, and bake in a hot oven.

CREAM OF CEREALINE.—Into two quarts of boiling veal stock stir slowly five ounces of cerealine flakes, a little salt, with pepper, and a little nutmeg. Stir and boil for five minutes. Press through a fine sieve. Return the liquid to a sauce-pan, and add a little boiling milk if needed. Leave on the fire and stir gently until it boils again. Finish with three egg yolks diluted with a cup of cream, and three ounces of butter mixed well. Serve with croutons or bread cut in half-inch squares fried brown.

STANDARD OF HEAT.—A standard thermometer is made with a dial upon which the figures are as easily read as upon a clock. In this instrument strips of metal, which are unequally acted upon by heat or cold, are soldered together in the form of spirals. The action of the temperature is multiplied by delicate wheels and pinions.

STRUCK BLIND.

THE DEADLY POISON THAT BLIGHTED THE OPTIC NERVE.

Our reporter was very much struck with a conversation between two well-known citizens, a short time ago.

"I notice you wear very strong eyeglasses."

"Yes, yes, I am a perfect slave to my goggles. It is hard for me to understand why one's eyesight fails when all other faculties appear to be in good condition. Even the young appear to lose their eyesight."

"I question very much the theory, and the old notion that poor light, fine print, etc., is responsible for it."

"It is well you may. If you consult an oculist for eye treatment, you will find he is almost sure to analyze the fluids passed, before he will commence treatment; one, once told me that over half of the failing eysight was attributable to disease of the kidneys, because of their inability to expel the uric acid from the system."

"How is that?"

"I do not know. He claimed that failing eyesight was one of the most prominent symptoms of advanced kidney and Bright's disease."

Becoming more interested, our reporter thought he would carry investigations still further, and called upon an institution where several prominent physicians are employed, and asked the question:

"Why is it that uric acid or kidney poison affects the eyes?"

One of them answered, "It does not affect the eyes any more than any other organ. It is one of the symptoms of kidney disease. The system becomes saturated with uric acid, and, as a result, the weakest organ is the first to suffer. It may be the lungs, heart, brain or any other organ; it generally affects many of the other organs, and the person so affected may call it general debility, or premature old age, when in reality it is but the effect of uric acid continually poisoning the system, gradually consuming the patient. It is for this reason our remedy cures so many persons of what are ordinarily called diseases, which in fact are only symptoms. We cure the cause and the cause cures the effect."

"Then you cure blindness, do you?"

"I will say yes, if you wish to put it as broad as that, and yet we are not entitled to the credit. When we restore the kidneys to health, they in turn restore the failing eyesight. Our remedy restores the kidneys to a healthy action, and they cause the cure, and so it is with many of the diseases that we cure, which in reality are but symptoms. For instance, N. S. Sparks of Rochester, says: "I had lost the use of one eye, and the other was rapidly failing, caused by impure blood. I took Warner's safe cure to purify my blood. Hardly expected it to restore my eyesight, but it has done so."

W. A. Bargy, of this city, says, "My little daughter, seven years old, complained some two years since of inability to see, and we noticed that she stumbled over things while walking about the house. I looked at her eyes and found them almost white. This so alarmed me that I consulted a physician, who said it would be necessary to have an operation performed upon them. To this I could not consent, but allowed him to give her several treatments. She grew worse and wasted to a mere skeleton, until a doctor more honest than the rest, advised Warner's safe cure, and we began its use. I noticed improvement at once, and gradually she regained her health."

Mrs. Emma A. Densmore, Washington, D. C., had her eyesight suddenly fail her, so she was unable, as she says, to read even the largest print, or recognize friends on the street. After a few bottles of Warner's safe cure, her eyesight began to return, and continuing its use she was completely restored.

Uric acid has a special liking for the optic nerve, and it is no uncommon thing for the eyesight to begin to fail as the kidney disorder advances, while the other organs remain in apparent good health for a longer period, or until there is a general giving way of the system. Then physicians blandly pronounce the malady general debility, or call a symptom a disease, that was the most prominent before death claimed its victim. They may call it apoplexy, paralysis, consumption, pneumonia, blood poisoning, impoverished blood, malaria, rheumatism, pleurisy—nevertheless it is kidney disease, all the same, under another name.

"Why all this deception?"

"Because the so-called medical fraternity have no preparations that can cure kidney disease, especially when it has become advanced, and they are ashamed to acknowledge it, and many of them are too hide-bound to their code to use a prescription and a specific for the kidneys, because it is advertised, and the proprietors refuse to expose their formula. That is exactly as it is, in as few words as I can give it."

"Thanks. You have no objections to my publishing this interview?"

"None, whatever. We have no secrets here, except our formula."

COCOA AND CHOCOLATE.

The grocery papers are once more filled with articles on cocoa and chocolate, emanating from various manufacturers, who ostentatiously pretend to give a great deal of information on the subject. We have before us now one of these articles and cannot help smiling when we imagine the manufacturer reading over these explanations and laughing in his sleeve at the gullibility of those to whom he sells his goods. We will reproduce this article in part that we may make a few comments on it.

"'Notwithstanding the enormous increase in the use of cocoa and chocolate,' said a manufacturer, 'I am asked every day what the difference is between them. There really is not much difference, for they are both prepared from the seeds of a tree which grows in Central and South America and the West Indies. Cocoa is the name given in commerce to the native bean, and it is also generally applied to the powdered forms of the article in the market. The cocoa tree was discovered by Humboldt in his travels. It is an evergreen, and bears flowers and fruit the year around. The fruit is shaped like a short cucumber and contains 20 to 30 beans in a rose-colored pulp. This pulp is sweet and is something like the meat of the watermelon. The natives use it for food. The fruit is gathered twice a year, in June and December, and the beans, after being separated from the pulp, are dried in the sun, when they are ready for the market. In preparing them for use they are roasted much as coffee is, and they then pass through several processes of crushing, grinding, etc., which remove the acrid oils, grit and roughness. The final process is to mix the ground mass with sugar in such proportion as may be desired for any particular kind of sweet chocolate. The taste for chocolate is an acquired one, but when once formed, it is not easily surfeited. It has grown much more rapidly in this country than in Europe.'"

Every word of this statement is true, yet it is not the whole truth. As most of the manufacturers make their goods there is no difference between cocoa and chocolate, for the simple reason that the majority of the so-called cocoa sold in the grocery stores is really nothing but a ground chocolate; but there should be a great difference, for cocoa should be the roasted cacao bean, ground and deprived of some of the indigestible fatty matter it contains without any foreign addition whatever, and chocolate should be this same cacao bean prepared in a cake-form flavored and perhaps sweetened. Instead of this the market is full of so-called cocoa and chocolate, which are simply vile adulterations made of the cacao butter sold by all first-class chocolate makers with additions of flour, starch, lard, oleomargarine, glucose, burned umber, vanilline, mirbane, tonka, nigrosine and other nauseous and deleterious substances foisted on an innocent public at prices at which the genuine raw cacao beans cannot be purchased. When you buy such things buy only the goods bearing the name of positively reliable makers, such as the old established house of Walter Baker & Co., Boston, who have no cheap goods to sell, but who would scorn to meet the demand for trash. All the inferior goods sold really help such a house as this by creating a demand for better goods, which they can be relied on to supply.

HAYDEN'S VIBURNUM COMPOUND.

It has been before the medical profession for twenty years and over, and yet remains the favorite.

COUGHS, COLDS AND RHEUMATISM.

With many people, the chief objection to the winter is the prevalence of colds, coughs, and rheumatism at that time of the year. They allow this supposed drawback to outweigh the bracing air, the invigorating winds, and the intense activity which low temperature always necessitate in healthy human beings. On account of this baseless fear, many who are well endowed with worldly goods travel to Europe, the West Indies, and Florida, while others seal their houses with unsanitary weather-strips, double windows, and storm-doors, and fill their rooms with an unhealthy tropical atmosphere. True precautions are seldom or never taken. The hints wisely given by nature as to the regulation of conduct, habits, and the organization so as to conform a person to his climatic surroundings, are unnoticed, or else, if noticed, disregarded. Yet, as a matter of fact, no one should have coughs, colds, and similar disorders in winter. Their existence bespeaks indifference, ignorance, or carelessness. Everyone should enjoy a robust and vigorous health. It is in the tropics, where snow and ice never comes, and where the vegetable world blooms the whole year round, that such complaints too frequently occur. They should never happen in the temperate North. The first suggestion of nature is, keep the temperature of the body uniform, but not high. Do not heat your homes too much; do not sleep under unnaturally heavy bed-clothes; and do not wear three or four thicknesses of closely woven heavy garments. All of these raise the warmth of the system to summer heat, open the pores and induce perspiration at the very time when it should not occur. A person thus heated goes out into the open air and, of course, chills immediately. He takes cold. If his neck be the weak spot he has bronchitis, laryngitis, or sore throat; if his olfactory organs, influenza or coryza; if his muscles, rheumatism; if his nerves, neuralgia; if his digestive system, indigestion, dysentery, or colic.

The second suggestion of nature is, keep the bowels open, the excutory functions active, and the blood free from humors. Unless this is done, the system becomes filled with impurities, the circulation is impaired, and the vitality greatly weakened. A person whose physical organization is in this condition takes cold from the slightest draft of cold air, or from a glass of some iced beverage; and, further than this, is liable to bilious attacks, lassitude, liver and kidney troubles, and a hundred and one other ills.

In perfect health all these suggestions are carried out into execution by the functions of the body. Perfect health, however, is so rare a thing in life that we all depend upon art and science to make good the defects and omissions of the human economy. For the complete performance of the requirements mentioned, artificial aid is requisite. This varies with the skill, knowledge, and the experience of the physician and the chemist. In the majority of instances this aid is very inferior in quality; in some, a large minority, it is worthless; in a few it is invaluable. Of the last class the best type is afforded by the Cathartic Pills made by Dr. J. C. Ayer & Co., of Lowell, Mass. These are a gentle but efficient aperient and blood-purifier, made according to the latest processes and formulas of pharmaceutical and chemical science. Their few ingredients are the ones most highly recommended by the faculty, and they are combined in the proportions which long experience and deep study have shown to be best suited for general use. In their manufacture, the best machinery and most skillful labor are employed, so as to insure a product which shall be invariably uniform and of theoretical purity and strength. Thus made they can withstand every climate and can be as thoroughly relied upon in tropical lands as in the coldest Canadian winter. When used, they not only exert a mild and beneficent aperient action, but also tone up the stomach, bowels, liver, and kidneys, remove all impurities from the blood, and restore to the system the strength and activity which mean perfect health and happiness. Employed in the winter season, they not only cure the ills, but what is of far greater importance, they prevent the coughs, colds, bilious attacks, and rheumatism, which too often make life miserable.

OUR MISSION.

WHAT THE AMERICAN ANALYST IS DOING.

FIGHTING ADULTERATION.

The steadily growing favor which the AMERICAN ANALYST is constantly receiving at the hands of both the reading and the business public is the best evidence that could be afforded of the useful field of effort it occupies. It was the pioneer journal in this country to take up the fight against adulteration, and stands to-day, by public acknowledgment, the only competent exponent of the principles involved in that momentous struggle. To this end the realm of sophistication and fraud has been thoroughly explored, and its corruptions, as far as practicable, exposed to the public view. Charlatans, adulterators, and handlers of poisonous food have been summarily and uncompromisingly dealt with. Humbugs seeking to enrich themselves, through the sale of high-sounding specifics for human ailments, have been subjected to the crucial test of thorough chemical analysis of their goods, and where the latter, as too frequently occurred, proved to be utter frauds in name, composition, and pretended effects upon the system, the real facts have been placed before our readers in order to save the public from further unconscious imposition. The veil of chemical mystery in which tricksters of this kind ostentatiously envelop their processes of manufacture, protects them as yet from the criminal laws to which other confidence operators are held amenable, and the only method for counteracting their nefarious schemes is through public exposure by the newspaper press. In exposing this species of fraud, the AMERICAN ANALYST has conferred a benefit upon the community, to which the latter is giving grateful and substantial recognition.

SANITARY AND FOOD REFORMS.

In addition to the foregoing, the AMERICAN ANALYST is in constant co-operation with the Boards of Health of this and other cities, in efforts to secure sanitary and food reforms through organized methods, and while it is nobody's mouthpiece, it is conceded to be the only popular medium through which those bodies can bring their purposes and action intelligently before the general public. Reaching as it does all classes, manufacturers, merchants, physicians, chemists and private families all over the land, its influence is exerted over a vast radius, producing results as visibly marked as they are wide-spreading.

HOUSEHOLD MATTERS.

"The American Household," edited by Miss Juliet Corson, is a department of special interest to ladies. It is very different and far superior to the ordinary cook book in that it tells the housewife suggestively what to buy, what foods are in season, as well as how to prepare the many varieties of dishes, all in a practical way easily followed. Other matters of great interest to housewives are also discussed.

PRACTICAL DISCUSSIONS.

Numerous other interests are also faithfully represented in our columns, such as the regular series of articles entitled, "Some Every Day Suggestions," relating to common experiences of society, the question of hygiene, and an infinite variety of practical subjects. In short, the AMERICAN ANALYST always keeps abreast in giving the fullest information on all matters directly or indirectly in the line of its proper field.

VOLAPUK.

Among the striking features of this Fourth Volume will be a course of progressive lessons in the new Universal Language, Volapuk, so arranged as to enable our readers to readily instruct themselves in this commercial tongue. This series alone will be found to be worth several times the cost of a year's subscription.

SCIENTIFIC INVESTIGATIONS.

The business transacted in the office of the AMERICAN ANALYST does not by any means all come to the surface in the pages of the paper. Minute analyses of chemical compounds, careful assays of minerals, examinations of questionable oils or doubtful condiments, and the many subtle operations incident to laboratory work are constantly required of us by correspondents far and near, and the results in many cases are not publicly recorded. In this manner, the influence of the paper encompasses a vast radius, from every point of which we receive constant expressions of approval, verbally, and in more substantial shape.

ITS VALUE TO ADVERTISERS.

No person can scrutinize the advertising pages of this journal without being impressed with the uniform high character of the numerous houses who find our columns the most desirable—because the most effective—medium for advancing their interests throughout the country in the several directions to which they respectively pertain. The steady growth of our subscription lists, extending to every State in the Union, and in fact all over the world, affords another gratifying evidence of the approval given to our endeavors to sustain genuine manufactures, and to expose spurious, fraudulent, and harmful knavery.

SUBSCRIPTION $1 PER YEAR.

Considering the amount of practical information regularly embodied in its contents, together with the fact that the subscription price for an entire year is only one dollar, we believe the day is approaching when the AMERICAN ANALYST will be regularly welcomed in every intelligent household in the land. Address,

ANALYST PUBLISHING CO.,
19 *Park Place, N. Y.*

A BUSINESS BENEFIT.

ADVANTAGES TO ADVERTISERS OFFERED BY THE AMERICAN ANALYST.

It has not the limitations of a daily paper. No one reads yesterday's paper. A monthly lives at least a month, while a semi-monthly is fresh twice a month, and its audience is not limited by geographical lines, but the circulation is all over the United States and Canada.

It contains matters of interest to everyone, especially the ladies of the household, and is, therefore, sure of a careful perusal. Our audiences are intelligent and of the better classes, who have money to spend, and any well worded advertisement in our columns, giving real information, will receive a careful perusal.

Our rates are as low as our circulation affords. Large circulation and original matter cost money, and those advertisers who desire to realize these benefits must expect to pay reasonably for them.

Advertisements in our columns are permanent. Most of our subscribers bind their numbers.

Our advertisements are set up in an attractive form, sure to call the attention of the reader.

Anything that our readers want, or for which a demand is to be created, not wholly of a local nature, will pay to advertise with us.

We take only advertisements from legitimate houses of really meritorious goods, and give them all the editorial assistance they deserve; consequently our readers knowing this, have confidence in advertisements contained in our columns.

The fact that we have the best and largest houses in every branch of trade advertising with us, and that they always renew as their seasons arrive, proves beyond a doubt that they have found the AMERICAN ANALYST a good advertising medium. Why should not you?

RATES OF ADVERTISING.

Agate measure, 14 lines per inch, 10¼ inches per column.

Six insertions (3 months), 15 cents per line.

Twelve insertions (6 months), 12½ cents per line.

Twenty-four insertions (1 year), 10 cents per line.

Single insertions, 35 cents per line.

All first-class advertising agencies take orders for us.

Address, AMERICAN ANALYST, 19 Park Place, New York City.

CATARRH CURED.

A clergyman, after years of suffering from that loathsome disease, catarrh, and vainly trying every known remedy, at last found a prescription which completely cured and saved him from death. Any sufferer from this dreadful disease sending a self-addressed stamped envelope to Prof. J. A. Lawrence, 212 East 9th Street, New York, will receive the recipe free of charge.

INDUSTRIAL NOTES.

MONEY MAKERS

Don't let golden opportunities pass unimproved; there are times in the lives of men when more money can be made rapidly and easily, than otherwise can be earned by years of labor. Write Hallett & Co., Portland, Maine, who will send you, free, full particulars about work that you can do, amd live at home, wherever you are located at a profit at least from $5 to $25 daily. Some have made over $50 in a single day. All is new. You are started free. Capital not required. Either sex; all ages.

THE GREENWAY BOTTLING.

In response to some pointed enquiries, we procured a full line of samples of the various brewings bottled by the Greenway Bottling Company of Syracuse. These consisted of

Greenway's American Half and Half.
" Brown Stout.
" India Pale Ale.
" Extra Porter.

All brewed by the Greenway Brewing Company.

Export Lager Beer, and
Crown Pale Beer,

brewed by the Germania Brewing Co. A thorough examination of these proved conclusively that there were no deleterious substances of any kind present, and that no salicylic acid or any sulphides had been used to prevent fermentation. They were excellent specimens of the brewer's art.

Travelers find great comfort in chewing Colgan's "Taffy Tolu." It allays thirst and palliates all throat troubles. Beware of imitations.

THE BEST TONIC.

This article has now been in the market a sufficient length of time to enable public opinion to form a reliable judgment upon it. Manufactured by an old and well known firm, such as the Philip Best Brewing Company of Milwaukee, is known to be, is a sufficient guaranty that so far as crude material, manufacture and necessary aging is concerned, nothing is left to be desired. It has been carefully introduced and not pushed among bar room trade, consequently it has been principally recommended by physicians for their patients' use. The universal verdict about it is, that it is a really superior article, bearing out its makers' statements and worthy of public confidence and patronage, all of which it seems to receive in a large and gratifying measure.

SPANISH CORKS.

Mr. Wm. J. Farrell, of the firm of Francisco Llado & Co., is about starting on an extensive trip through Spain, in the interests of that house, who are the largest importers of fine corks in this country. The firm announces in its circular, that "Great care will be given to the selection of hand cut corks for size; with improved methods, we expect to turn out corks, that for all practical purposes, will be equal to machine cut in uniformity, excelling them in every other respect. The very large amount of corks handled by us places us in a more favorable position to make low prices, particularly for quantities on contract. For this reason we would request large consumers to favor us with their orders in advance or for 'special importation.' Corks so ordered will be selected with particular care, and they can be invoiced direct from our factory in San Feliu de Guixols, if desired. All such orders received previous to the departure of our Mr. Farrell, will be taken to Spain by him, and the preparation of the goods will have his personal attention. Our brewers' corks give entire satisfaction, on account of the corkwood being cut dry, by hand machines, thereby retaining its natural elasticity, as in the case of our regular hand cut corks. Our large and increasing importations we owe to the generous support to our patrons, for which we are deeply grateful. We shall continue our best efforts to please, to the end that we may always be adding to our long list of friends."

Colgan's "Taffy Tolu" is a perfect chewing gum, pure and healthful. The best druggists and physicians recommend it for indigestion. Get Colgan's.

CONSISTENT.—The woman whose favorite hymn is, "I would not live alway," has spent $230 for patent medicines the past ten years.—*Norristown Herald.*

1888. 1888.

THE

American Analyst.

VOLUME FOUR.

THE new Volume now beginning will contain, besides the various Departments which have given such universal satisfaction, several NEW FEATURES of great popular interest and value. Among these will be

EASY LESSONS IN VOLAPUK.

AN EXHAUSTIVE SERIAL TREATISE ON AMERICAN WINES.

FOOD ADULTERATION FROM A NATIONAL STANDPOINT.

THE LARD ADULTERATION QUESTION.

INVESTIGATION OF ALUM BAKING POWDERS.

INFORMATION FOR AMERICAN HOUSEWIVES.

And full discussions of a great variety of practical, economical subjects relating to the household and important to the housekeeper, such as can be found in no other journal in America.

— SUBSCRIPTION, $1.00 PER YEAR.—

ADDRESS:

AMERICAN ANALYST,

No. 19 Park Place,

NEW YORK.

THE LESLIE E. KEELEY CO.



DWIGHT, ILLINOIS.

We solicit an investigation of our system and methods and will gladly send to any one, very interesting reading matter on the OPIUM HABIT, DRUNKENNESS and their effects and cure. Physicians specially invited to examine, and if desirous of trying our remedies, liberal arrangements will be made with them. Prompt and frank attention to correspondence. The remedies are put up safely in stout boxes and sent masked. Full directions sent.

THE LESLIE E. KEELEY CO.,

Dwight, Illinois.

PULLMAN BUFFET SLEEPING CARS WITHOUT CHANGE,

St. Louis to Los Angeles and San Francisco,

VIA THE IRON MOUNTAIN ROUTE,

Leave St. Louis at 8.30 P. M., Daily.

THE ONLY LINE THAT DOES IT.

NO HIGH ALTITUDES, NO SNOW BLOCKADES.

TO CLEAN GILDING.—Spots may be taken from gilding by immersing the article in a solution of alum in pure soft water. Dry with sawdust.

AN EXTRAORDINARY OFFER!

1000 $2.00 Corn Shellers, Absolutely Free to the first 1,000 Subscribers. 50 Cent Sewing Machine Relief Springs, Absolutely Free to the second 1,000 Subscribers enclosing this advertisement.

The Giant of the Family Monthlies.

THE INVESTIGATOR.

A Journal of Practical Information.

Only Fifty Cents per year, including valuable premium. Five Cents per copy. None Free.

Beautifully Illustrated and Printed.
A Complete Story in Each Issue

Edited and written by practical men and women, the foremost in their specialties in America.

The Investigator's Practical Departments.

Frauds and Humbugs, Counterfeiters, Chemist, Manufacturer, Inventor, Cook, Housekeeper, Agriculturist, Lawyer, Photographer, Mechanic, Artist, Antiquarian, Numismatist, Philatelist, Fashions, Etiquette, Amusements, Exchanges, Correspondents, Physician, Confectioner, etc., etc.

THE INVESTIGATOR will contain the cream of a thousand standard works, the late revelations of genius and experience, the embodied wisdom of practical and successful men and women of the past and present.

THE INVESTIGATOR FREE.

If you subscribe to one or more journals, send your subscriptions direct to us, and we will include THE INVESTIGATOR without extra charge.

$10,000 IN PREMIUMS.

Absolutely Free to Club Raisers: Pianos, Organs, Sewing Machines, Gold and Silver Watches, Diamond Rings and other Jewelry. Gold Pens and Pencils, Fountain Pens, Albums, Printing Presses, Type Writers, etc., etc.

Address all communications, and make all money orders payable to

THE INVESTIGATOR COMPANY,

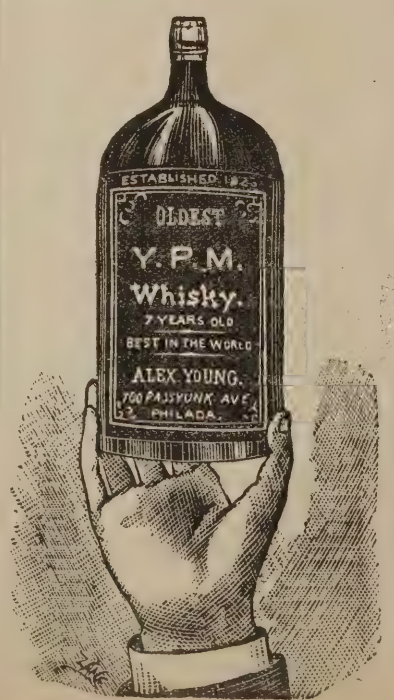
2 East 14th St., Box 180,

Cor. Fifth Avenue. NEW YORK.

LIFE INSURANCE AT ACTUAL COST.

Persons desirous of obtaining life insurance at actual cost, should write for circulars to the SECURITY MUTUAL BENEFIT SOCIETY, No. 233 Broadway, New York.

This Society claims that since its organization, the cost to a member of middle age has been *less than twelve dollars a year* for each thousand dollars of insurance.



ESTABLISHED 1823.

ALEX. YOUNG CO., Limited

DISTILLERS OF

Y. P. M. WHISKIES

DISTILLERY,

Nos. 408, 410, 412 and 414 South Street,

MALT HOUSE,

416, 418, 420, 422 and 424 South Street,

STORE,

No. 700 Passyunk Avenue.

PHILADELPHIA, PA.

FULL WEIGHT
PURE
DR. PRICE'S
CREAM
BAKING
POWDER
MOST PERFECT MADE

Its superior excellence proven in millions of homes for more than a quarter of a century. It is used by the United States Government. Endorsed by the heads of the Great Universities as the Strongest, Purest, and most Healthful. Dr. Price's the only Baking Powder that does not contain Ammonia, Lime or Alum. Sold only in cans.
PRICE BAKING POWDER CO.
NEW YORK. CHICAGO, ST. LOUIS.

RHEUMATISM
is a blood disease and *Corey's Mexican Remedy a positive cure.* Purely vegetable. Not a case of failure known. So strong is our faith, we will send one bottle to any sufferer *free.* Address
THE IDEAL MEDICINE CO., 19 Park Place, New York City.

THURSTON'S
IVORY PEARL TOOTH POWDER
WILL KEEP THE TEETH IN PERFECT CONDITION AND THE GUMS HEALTHY.
Price 25 & 50 Cents PER BOTTLE.



These Goods are "Par Excellence,"
Pure, Healthful and Reliable, warranted to give satisfaction in every particular.
For sale by wholesale and retail grocers throughout the United States. VOUWIE BROS., Manufacturers CLEVELAND and CHICAGO.

PURITY AGE STRENGTH

The "Best" Tonic

A Concentrated Liquid Extract

OF

MALT AND HOPS.

Invigorating
and
Nutritious.



INSURES
A
Healthy Appetite
—AND—
AIDS DIGESTION.

STRENGTHENS THE SYSTEM.

One of the Most Efficacious Remedies for Dyspepsia.

INDISPENSABLE FOR NURSING MOTHERS. THE MOST WHOLESOME TABLE BEVERAGE.

The "BEST" Tonic is manufactured from the Best Malt and Choicest Hops and neither Alcohol, Spirits nor Chemicals of any kind are used in its preparation.

MANUFACTURED ONLY BY

Specialty Department, **PHILLIP BEST BREWING CO.,**

Eastern Depot, 28 College Place, N. Y.

General Office, - - - - MILWAUKEE, WIS.

J. HENRY HENTZ. J. P. ROBINETT. J. HENRY HENTZ, Jr.

ESTABLISHED 1793.

WHITE, HENTZ & CO.,

SOLE PROPRIETORS OF

Trimble and Pennsylvania Monogram Whiskies.

222 and 224 NORTH SECOND ST., PHILADELPHIA.

D. LIEBER, 17 South William St., New York. Col. H. A. SELIGSON, 1200 Pennsylvania Ave., Washington, D. C.



KING'S

Quick Rising Flour

—AND—

CEREAL FOODS

Are Pure and Wholesome.



King's Quick Rising Buckwheat Flour.
King's Quick Rising Winter Wheat Flour.
King's Quick Rising Graham Flour.
King's Quick Rising Brown Bread Flour.
King's Partly Cooked Rolled Oats.
King's Irish Oatmeal. King's Partly Cooked Rolled Wheat.
King's Cracked Wheat. King's Steel Cut Oatmeal.
King's White Hominy.
King's Corn Grits or Samp.
King's Golden Corn Meal.
King's Silver Meal.
King's Farina.

If you cannot get these Goods of your dealer, order direct from us.

KING & LAMB, Manufacturers,

14 Fifth Avenue, CHICAGO, ILL.

For Sale in New York by H HAHNENFELD, 540 and 767 Third Ave., and 877 Fourth Ave.

HAND SEWED SHOES.

MYERS & BARRY.

HAND SEWED SHOES, ... $3 50
TO ORDER, ... $4 00

All grades of French Calf constantly on hand.

123 Roosevelt St. (near the Ferry), New York.

10 CENTS (silver) pays for your address in THE INVESTIGATOR'S Agents' Directory, which goes direct to manufacturers, importers, dealers and publishers all over the United States, from whom you will get hundreds of samples, circulars, books, newspapers, magazines, &c., from those who want agents. You will get lots of mail matter and good reading free, and be well pleased with the small investment. List containing name sent to each person answering this advertisement. THE INVESTIGATOR CO., 2 East 14th Street, New York. Box 180.

Gluten Flour and Special Diabetic Food are invaluable waste-repairing Flours, for Dyspepsia, Diabetes, Debility, and Children's Food. No Bran, mainly free from Starch. Six lbs. free to physicians and clergymen who will pay express charges. For all family uses nothing equals our "Health Flour." Try it. Samples free. Send for circulars to FARWELL & RHINES, Watertown, N. Y.

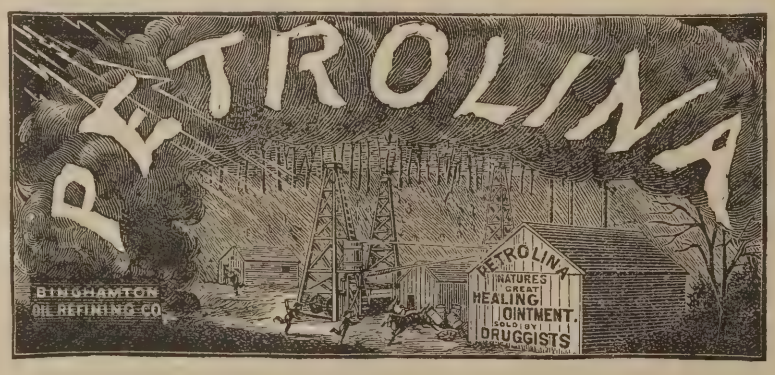
PETROLINA

Named Petrolatum by the Pharmacopœia.

Non-oxidizable, Unchangeable, Affected by neither Time nor Temperature.

COLOR LIGHT STRAW; MELTING POINT, 115° F. TRADE SUPPLIED BY JOBBERS.

PLAIN,
POMADE,
SCALPENE,
CARBOLATED,
CAMPHORATED,
ARNICATED,
COLD CREAM,
CAMPHOR ICE, COSMETIC,
PETROLINA OIL.
HOOF OINTMENT,
VETERINARY.



ALWAYS PURE,
SWEET,
NEUTRAL
AND
UNIFORM.

For Medicinal, Pharmaceutical and Toilet Purposes there is nothing on the market as good, as pure, or as handsomely and conveniently packed as

PETROLINA.

Please remember that an article suitable for the most delicate pharmaceutical preparations can not be made as cheaply as "axle grease;" that there are Petroleum Jellies and Petroleum Jellies, and that **PETROLINA** heads the list in all that pertains to a perfect article.
Order the goods, either in bulk or preparations, of your wholesale druggist. If he does not have them, write to our office.

THE BINGHAMTON OIL REFINING CO.

New York Office, 80 Cortlandt Street. BINGHAMTON, N. Y.

CUM HOC SIGNO  COGNITUS EST

LIQUID

PANCREOPEPSINE

(WARNER'S DIGESTIVE FLUID.)

FOR THE CURE OF

DYSPEPSIA AND MALARIA

This preparation contains in an agreeable form the natural and assimilative principle of the digestive fluids of the stomach and duodenum, comprising **Pancreatine, Pepsin, Lactic and Muriatic Acids.** The best means of re-establishing digestion in enfeebled stomachs, where the power to assimilate and digest food is impaired, is to administer principles capable of communicating the elements necessary to convert food into nutriment.

It is usually given in doses of from one to two tablespoonfuls after each meal, with a small proportion of water or wine, or alone, as it is very pleasant and agreeable to the taste.

Put up in Sixteen-ounce French Square bottles, for Physician's prescriptions, and druggists can attach a label with doctor's directions.

WILLIAM R. WARNER & CO.,

1228 Market Street, Philadelphia.

22 Liberty Street, New York.

SUPPLIED BY ALL DRUGGISTS.

Humorous Column, Edited by S. W. Foss, the well-known contributor to all leading American Humorous Publications.

150,000 READERS EVERY WEEK

Fancy Work Department, Edited by Eva M. Niles, the leading American authority on Fancy Needle Work Designs.

THE YANKEE BLADE

Is now in its forty-seventh year, and is unquestionably the Largest, Brightest, Handsomest and Cheapest Weekly Family Story Paper in America. The publishers of THE YANKEE BLADE are aiming for THE LARGEST CIRCULATION IN AMERICA. With this object in view they make a special offer to new subscribers Send a trial subscription, and be prepared to know what paper to order for the coming year. All who subscribe at once will receive THE YANKEE BLADE 5 weeks for 10 cents; 13 weeks for 25 cents; six months for 50 cents; one year, $1; two years, $1.75. A SUBSCRIPTION FREE for EVERY CLUB OF FOUR NEW SUBSCRIBERS. Don't misunderstand our offer. The regular subscription price of THE YANKEE BLADE is $2, but to introduce our paper everywhere it will be sent ON TRIAL during the continuance of this offer for the special prices named above. THE YANKEE BLADE can be procured through any newsdealer at 5 cents a copy. Remittances should be made in Money Orders, Express Orders, or Registered Letter at our risk. Postal Notes are no safer than bills. Stamps taken (one cent preferred) when more convenient. All Postmasters are required to register letters when requested. Address,

5 WEEKS —FOR— 10 CENTS

The POPULAR AMERICAN WEEKLY.

"18 THE YANKEE BLADE" One Subscription Free for Every Club of Four New Subscribers, And $4. ON TRIAL, ONE YEAR.

13 WEEKS —FOR— 25 CENTS

POTTER & POTTER, Pubs,
43 Milk Street, Boston, Mass.

Household Department, Edited by Trebor Ohl. Containing only authorized reports of the Boston Cooking School.

Fascinating Stories Of Adventure and Travel for Men. Stories of Love and the Family Fireside for the Ladies.

FAT **CORPUS LEAN** *will reduce fat at the rate of 10 to 15lbs. per month without affecting the general health.* **6c.** *in stamps for circulars covering testimonials.* S. E. Marsh Co., **2315** *Madison Sq., Philadelphia, Pa.*

MADE **ABSOLUTELY HARMLESS** *simply stopping the FAT-producing effects of food. The supply being stopped the natural working of the system draws on the fat and at once reduces weight.* LEAN

ESTABLISHED 1857.

J. H. CUTTER,

OLD

BOURBON AND RYE WHISKIES.

We are the Sole Owners and Proprietors of this Celebrated Brand of Whiskey.

C. P. MOORMAN & CO. **LOUISVILLE, KY.**

We Guarantee the Superior Quality and Absolute Purity of every Barrel of Whiskey sold by us under this Brand.

W. P. FESSENDEN, Agent for N. E. States, Maryland and Penn., 11 Central St., Boston.

THE OLDEST.

THE GENUINE EAU DE BOTOT BOTOT WATER
THE ONLY DENTIFRICE APPROVED BY THE ACADEMY OF MEDICINE OF PARIS, FRANCE.



FOR MORE THAN A CENTURY IN GENERAL USE IN EUROPE.
SOLE AGENT FOR THE UNITED STATES. FREDERIC REISET. 44 BEAVER STREET. NEW YORK.

THE BEST.

SEND

YOUR WIFE

THE

American Analyst.

$1.00 A YEAR.

CURE FOR THE DEAF

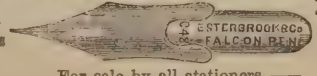
PECK'S PATENT IMPROVED CUSHIONED EAR DRUMS **Perfectly Restore the Hearing,** and perform the work of the natural drum. Invisible, comfortable and always in position. All conversation and even whispers heard distinctly. Send for illustrated book with testimonials **FREE.** Address or call on

F. HISCOX, 853 Broadway, N. Y.

Mention this Journal.

ESTERBROOK'S STEEL PENS

Leading Numbers



14,048,128
130, 135,
333, 161.

For sale by all stationers.

THE ESTERBROOK STEEL PEN CO., 26 John St., N. Y.
Works: CAMDEN, N. J.

A VALUABLE BOOK FOR NOTHING.

The AMERICAN ANALYST will send to any person who will forward a New Subscription with One Dollar, a copy of

THE FAMILY CYCLOPÆDIA OF USEFUL KNOWLEDGE.



This is unquestionably one of the most interesting, entertaining and instructive books ever published. It is a universal educator for every member of the family circle, filled with useful information from beginning to end, and this information is given in such an attractive and pleasing way that the book is quite as entertaining as it is instructive. It treats of hundreds of subjects of which no man, woman or child who seeks to be well informed can afford to be ignorant, yet of which the masses of people are entirely unlearned. It contains the cream or substance of a dozen ordinary volumes, and is one of the most valuable and useful books a family can have in the house. No living man is so well informed that he may not learn from it. It is a book for the masses, for old and young, rich and poor, and will be read with pleasure and profit by all. It will likewise be found of great value as a work of reference. The book is profusely and elegantly illustrated, and is conveniently divided into departments, as follows: **Biography, History, Natural History, Travels, Manners and Customs, Etc.; The World Illustrated, Useful Arts and Manufactures, Trees, Plants, Fruits, Etc.; Great Inventions, Mining, Wonders of the Sea, Familiar Science, Law for the Masses, Statistical and Miscellaneous.** All the above subjects are fully and ably treated in this valuable book. It is a vast storehouse of useful and entertaining knowledge—unquestionably one of the best and most valuable books ever published in any land or language. No cyclopædia ever heretofore published at twice the cost is to be compared with this book in point of artistic make-up, beauty, and excellence of illustration, and quality of contents. As a holiday or birthday present for any one, nothing more appropriate or acceptable could possibly be selected. THE FAMILY CYCLOPÆDIA OF USEFUL KNOWLEDGE is a large and handsome book of 544 pages, 12mo, printed upon fine paper and elegantly bound in cloth, embellished with artistic designs in black and gold. It contains **Two Hundred and Seventy-three Beautiful Illustrations,** the original cost of which was over $5,000. The book will be sent by mail, post-paid, to any person sending a **New Subscription with One Dollar.** It is as large and handsomely gotten up as books usually sold at $1.50 and $2.00, and in the quality of its contents is worth a dozen ordinary volumes.

ADDRESS ANALYST PUBLISHING CO.,

19 PARK PLACE, NEW YORK.

QUINA-LAROCHE

A STIMULATING, RESTORATIVE AND ANTI-FEBRILE

VINOUS ELIXIR

OF THE THREE CINCHONA BARKS.

A most powerful restorative in all cases where Cinchona is indicated,

As MALARIA, EXHAUSTION, SLOW CONVALESCENCE, GENERAL DEBILITY, Etc.

LAROCHE'S QUINA possesses in the highest degree the restorative and invigorating qualities of Cinchona, which is the best known medicine for giving tone to the digestive organs. It succeeds completely in removing LANGUOR, WEAKNESS, WASTING DISEASES, WANT OF APPETITE, and for FEVER AND AGUE IT IS ONE OF THE BEST SPECIFICS.

FOR SALE BY ALL DRUGGISTS.

E. FOUGERA & CO.,

PARIS, 22 RUE DROUOT. Sole Agents for the United States.

THE FINE COFFEES

ROASTED AND SOLD

BY THE

Schnull-Krag Coffee Co.

are shown by analysis and test, to be equal to any Coffees produced in America. By the superior process of roasting and blending, which is a well guarded secret of the proprietors, they have been able in a short time to place their goods in all the States of the West and North-West; and while it may seem like carrying coals to Newcastle to ship these goods to the markets east of us, yet as they are packed in patent air tight cans, thus preserving the aroma as well as avoiding contamination of the goods with the impure atmosphere, it is not only safe, but in all respects practicable to ship to all points east or west without the risk of having the goods depreciated in transportation. To dealers who are desirous of testing these coffees, they can have them sent on trial, and if at the expiration of sixty days they are not entirely satisfactory, they may be returned at our expense. This coffee is packed in 50 lb. air tight cans. For price list and descriptive circulars, address the Company.

THE SCHNULL-KRAG COFFEE COMPANY,

INDIANAPOLIS, IND.

Tabasco Pepper Sauce

OR LIQUID PEPPER.

Is simply the Pulp of the Ripe Pepper Extracted by Pressure.

The seed of this Pepper was obtained from Central America, and by careful cultivation in Louisiana for many years has been so improved in strength, flavor and aroma, as to have become a new variety of Red Pepper, superior to all others. The pulp is so handled as to retain all the flavor, strength, aroma and color of the ripe fruit, and to keep unimpaired in any climate. It excites the appetite, promotes digestion, and is pronounced, by connoisseurs, to be the finest condiment in the world. For medicinal purposes it recommends itself by its purity, strength and diffusible form.

Manufactured by E. McILHENNY,

NEW IBERIA, LA.

For Sale by all Wholesale Grocers.

SWIFT'S

Choice Chicago Dressed Beef

—AND—

MUTTON.

CAN be found at all times in full supply and at popular prices at the branch houses in all the larger cities and is ***retailed by all first class butchers.***

The trade of all marketmen and meat dealers is solicited for our Wholesale Branch Houses, and the ***public may rest assured*** *that in* ***purchasing our meat*** *from dealers they will* ***always receive the best.***

SWIFT AND COMPANY,

UNION STOCK YARDS,

CHICAGO, ILLS.

PEACOCK'S BROMIDES

(SYR: BROM: COMP: PEACOCK)

NERVE SEDATIVE.

Each fluid drachm represents 15 grains of the Combined C. P. Bromides of Potassium, Sodium, Calcium, Ammonium and Lithium.

USES:—EPILEPSY, and all CONGESTIVE, CONVULSIVE, and REFLEX NEUROSES.

This preparation has stood the test of time and experience, and can be relied upon to produce results, which can not be obtained from the use of commercial bromide substitutes.

DOSE:—One to two FLUID drachms, in WATER, three or more times a day.

PEACOCK CHEMICAL CO., St. Louis.

GORDON & DILWORTH

MANUFACTURING PURVEYORS

Established 1847

ALIMENTARY PRODUCTS

ALL OF OUR PRODUCTIONS BEAR THIS TRADE MARK

WE WILL PROSECUTE ALL INFRINGEMENTS & IMITATIONS







CHOICE DESSERTS

OVER 100 DOMESTIC & FOREIGN FRUITS AND VEGETABLES TRANSMUTED INTO TABLE DELICACIES

PRICES ON PRESERVED FRUITS REDUCED 1ST DEC. 1885

PRESERVED, CANNED & BRANDY FRUITS, FRUIT JELLIES, VEGETABLES, TOMATO CATSUP, SYRUPS & JAMS, SALAD DRESSING, BLACKBERRY BRANDY, MINCE MEAT, PLUM PUDDING, SWEET PICKLES, OLIVES & CAPERS, WINE JELLIES, MARMALADE, SOUPS, SAUCES, &c

SOLD BY THE LEADING GROCERS ON THE AMERICAN CONTINENT.

BOVININE, BUSH'S FLUID FOOD,

Is the ORIGINAL and ONLY preparation of RAW FOOD that does not become putrid and disgusting in a short time.

A MOST WONDERFUL NUTRIENT.

The vital principles of Beef and Mutton concentrated. A highly condensed Raw Food Extract. Acceptable to the most delicate taste and smell. Retained by delicate stomachs that reject all other foods. It assimilates more readily than any other food known to the medical profession. Bovinine under the microscope shows the blood corpuscles in their normal condition strongly marked, while in other foods or extracts this vitally important element is destroyed by the action of heat in cooking.

Containing 26.58 Per Cent. of Soluble Albuminoids,

According to OSCAR OLDBERG, Ph.D., Professor of Chemistry and Toxicology, and Dean of the North-Western College of Pharmacy.

A. L. LOOMIS, M. D., Professor in Medical Department of University of New York, says: "I prescribe Bush's Fluid Food or BOVININE, and prefer it to similar preparations."

J. S. JEWELL, M. D., Chicago, says of Bovinine: "I am delighted with it; it is what I have been looking for these twenty years, and it supplies a want that nothing else has been able to fill."

DRS. WARD and FRED. SMITH, speaking for themselves and their colleagues of the Hospital of St. Barnabas, Newark, say: "Bovinine was readily taken by the patients, was easily retained, and in many cases by stomachs which had rejected all other forms of nourishment. We believe Bovinine contains more nutriment, relative to the bulk, than any other preparation known to the medical profession."

"During the last four months of his sickness, the principal food of my father, General Grant, was Bovinine and Milk; and it was the use of this incomparable food alone that enabled him to finish the second volume of his personal memoirs.—FRED. D. GRANT."

October 1st, 1885.

Carefully prepared from the formula of the late James P. Bush, by the J. P. Bush Manufacturing Co., 44 Third Avenue, Chicago, Ill.

PUT UP IN 6 AND 12 OUNCE SIZES, AT 60c. AND $1.00 PER BOTTLE.

For Sale by all Druggists.

Principal Office, 2 BARCLAY STREET, NEW YORK CITY.

A POTENT REMEDY

—)FOR(—

INDIGESTION, ACUTE AND ATONIC DYSPEPSIA, CHRONIC AND GASTRO-INTESTINAL CATARRH, VOMITING IN PREGNANCY, CHOLERA INFANTUM, AND IN CONVALESCENCE FROM ACUTE DISEASES.

Over **5,000** Physicians have sent to us the most FLATTERING OPINIONS upon DIGESTYLIN, as a REMEDY for all diseases arising from improper digestion.

For 20 years we have manufactured the DIGESTIVE FERMENTS expressly for Physicians' use, and for the past year **DIGESTYLIN** has been by them extensively prescribed, and to-day it stands without a rival as a digestive agent.

KIDDER'S

DIGESTYLIN

FOR

INDIGESTION & DYSPEPSIA

It is not a secret remedy, but a scientific preparation, the formula of which is plainly printed on each bottle. Its great DIGESTIVE POWER is created by a careful and proper treatment of the ferments in manufacture. It is very agreeable to the taste, and acceptable to the most delicate stomach. For the reliability of our statements, we would respectfully refer to the WHOLESALE and RETAIL DRUGGISTS of the country, and PHYSICIANS generally. Sold by Druggists, or

WM. F. KIDDER & CO.,

PRICE, $1.00. **83 John Street. New York.**

ON THE USE OF PURGATIVES.

BY CHARLES A. HOFF, M. D., ST. LOUIS, MO.

Of all preparations contained within the *pharnacopœia,* there are none, apparently, held in higher esteem by mankind than that class of medicines, commonly known as purgatives The busy practitioner confidently prescribes them with variable frequency, singly and combined, from the date of the writing of his very first prescription to that of his last; and the corner druggist rarely sees a day pass over his head on which he does not greet the customer who has called around to get "something to act upon his bowels." Indeed, the inevitable purgative awaits the tiny baby screaming in its first attack of colic; it is resorted to by the invalid weighted down with years of suffering and disease; and it is by no means despised by the individual in robust health, when assailed by the various petty ills, which even the most vigorous seldom entirely escape.

Notwithstanding the fact that purgatives are so generally prescribed by the physician, and so frequently resorted to without advice by the patient, they are not altogether incapable of doing harm. As everybody knows, the habit of purging the system repeatedly with salines, cholagogues, hydragogues, or drastics, is a most pernicious one; and the physician who fails to exercise a proper care, both in the selection and the administration of cathartics will sooner or later bankrupt the health of his patients as well as his own hard earned reputation.

Constipation is a complication of so many disorders, a symptom of so many diseases that its treatment in different cases depends upon very different considerations. For a simple, ordinary attack, the average doctor has been accustomed to use a simple purge, such as castor oil, sulphate of magnesia, rhubarb, senna, aloes, colocynth, blue pills, etc.; yet in none of these, can it be truly said, has there been found all that could be wished for, even in so simple a matter as a laxative. Where can we find the physician who has not been vexed and annoyed at the complaints of his patients against the purgative medicines he has been accustomed to prescribe. Some people there are who can not or will not swallow pills; many object to the nauseating castor oil; not a few oppose the use of salines since they are disagreeable both in taste and effect; many look upon all resinous cathartics as objectionable on account of their so called heating properties; aloes is objected to in pills and especially in pregnancy; elaterium is said to be excessively harsh and severe, croton oil is known to be dangerous; podophyllin causes an undue amount of griping; blue mass is avoided on general principles; and so on to the end of the chapter.

Fortunately, however, the physician of the present need no longer be placed in a dilemma when called upon to prescribe a preparation free from the faults enumerated in connection with ordinary purgatives. The pharmacist has bravely come to his aid with a formula of incomparable excellence; and this preparation, a combination of "manna, purified cathartic acid and fruit juice," although but recently brought to the notice of the medical world, is, nevertheless, already regarded as a most valuable addition to the resources of medicine.

The happy thought that suggested the combination known as the Rio Chemical Co.'s Acid Mannate justly challenges unlimited admiration and esteem, and has thus far evoked from the profession an almost universal verdict of commendation and praise. Prompt, mild and certain in its action, Acid Mannate may well be considered an ideal remedy in the constipation of pregnancy. Being pleasant to the taste, and continuing its good work without increased dosage, it is pre-eminently adapted to cases of habitual constipation. Indeed, in its wide range of adaptability as an aperient medicine it is impossible to exaggerate its importance, or allude either directly or indirectly to the vast variety of its beneficial, therapeutical properties.

The importance of laxatives is probably nowhere appreciated so much as in the constipation of pregnancy; and it is to this fact, no doubt, more than to any other, that Acid Mannate owes its great popularity and fame among remedial agents. The testimony of thousands of honorable medical gentlemen leading us to believe that, through the beneficent effect of this same elegant formula, constipation need not hereafter, as in the past, be regarded as one of the most troublesome attendants upon gestation. Moreover, the atrocious female pill of unknown composition but of dire effect, which has deluged the drug market for ages, we may consider as having had its day; and it is to be hoped that, since the physician is now in possession of a purgative especially suited to the period of gestation, female life will be less frequently harassed by the ails and aches said to be peculiar to the sex; and that miscarriages, displacements, granular erosions, congestions, headaches, dyspeptic and hypochondriacal attacks, and the whole long train of aches, pains and nervous ills will grow less familiar to the medical profession in the same ratio that the physician increases his familiarity with the actions of Acid Mannate.

A full sized bottle of Acid Mannate will be sent free to any Physician who desires to test it, if he will pay the express charges and mention this Journal, on application to the

RIO CHEMICAL CO.,
St. Louis, Mo.

ESTABLISHED 1835.

CORNWALL & BROTHER

—) FINE (—

Milled, Toilet and Laundry

SOAPS AND CANDLES,

LOUISVILLE.

CARNRICK'S SOLUBLE FOOD

FOR INFANTS AND CHILDREN.

For Mothers, Invalids, Dyspeptics & Aged People.



THE ONLY FOOD *that digests as easily as human milk, and agrees with all infants and children.*

THE ONLY FOOD *that thoroughly nourishes the child without the addition of cow's milk.*

THE ONLY FOOD *that removes from infancy all necessity, danger and annoyance of a wet nurse.*

TAKEN BY MOTHERS *once or twice a day the quantity of milk will be increased and quality at once improved.*

IF THE CHILD IS RESTLESS, *change partially from nursing to* **SOLUBLE FOOD.**

DR. STUTZER, Food Analyst for Rhenish Prussia, says: "CARNRICK'S SOLUBLE FOOD is the best of all the foods I have ever examined."

"OUR BABY'S FIRST AND SECOND YEARS," by Marion Harland. Book of 64 pages, giving careful instructions for bringing up the little ones. Sent free by

REED & CARNRICK, N. Y.

ARMOUR & CO.

CHICAGO, ILLS.

PACKERS OF

Pork and Beef Products

CANNED MEATS,

ETC.,

FOR HOME CONSUMPTION AND FOR EXPORT

TO ALL PARTS OF THE WORLD.

Also,

SHIPPERS OF

Choice Dressed Beef,

MUTTON AND HOGS,

In Refrigerator Cars,

To BOSTON,

NEW YORK,

PHILADELPHIA,

BALTIMORE,

And other cities throughout the country.

NATRONA BI-CARBONATE OF SODA.

(ABSOLUTELY PURE.)

NATRONA



TRADE MARK

SODA

The nature of the raw material from which NATRONA BI-CARBONATE OF SODA is made—viz., kryolith, a mineral containing *pure sodium*—insures a purity and uniformity of product which cannot be obtained from any other known material. In making BI-CARB. SODA from any other raw material, the use of sulphuric acid is a necessity, but none is used in any part of the process of making NATRONA BI-CARB.; hence its entire freedom from the slightest trace of arsenic, which is always present in ordinary soda. I s absolute purity and entire freedom from all traces of *sulphate of soda*, common salt and other impurities, render NATRONA BI-CARB. NEARLY TASTELESS, and being bolted through the finest bolting-cloth, insures the finest stage of division.

To these indisputable facts the attention of CONSUMERS of soda is specially called. They are IMPORTANT, and should influence both those who use and those who sell soda, to buy and sell NONE BUT THE BEST.

The NATRONA BI-CARB. Soda is kept in stock by almost every wholesale druggist and grocer throughout the United States, of whom it may be ordered.

Natrona Bi-Carb. Soda is unequaled by any other brand of English or American Manufacture.

PENNA. SALT MANUFACTURING CO.,

NATRONA CHEMICAL WORKS. PHILADELPHIA, PA.

ESTABLISHED IN LONDON 1831.



W. G. DEAN & SON,

—MANUFACTURERS OF—

PASTE AND STICK

LICORICE

PURE CALABRIA, Equal to the Imported

Try our SICILY (brand select).

BEST IN THE MARKET.

Also LICORICE TABLETS.

361 & 363 Washington Street,

And 84, 86 & 88 North Moore St.,

W. G. DEAN, HARRY W. DEAN. NEW YORK.

Sura Cura ROBINSON'S SURE CURE FOR

RHEUMATISM

And NEURALGIA,

And remedy for diseases arising from an impure state of the blood. An antidote for MALARIA. Price 50 c. and $1. Sent by mail on receipt of price. Send for Circular.

R. W. ROBINSON & SON,
184 Greenwich Street,
NEW YORK.

Sura Cura



GOLD MEDAL, PARIS, 1[illegible]

BAKER'S

Breakfast Cocoa.

Warranted ***absolutely pure Cocoa,*** from which the excess of Oil has been removed. It has *three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup.* It is delicious, nourishing, strengthening, easily digested, and admirably adapted for invalids as well as for persons in health.

Sold by Grocers everywhere.

W. BAKER & CO., Dorchester, Mass.

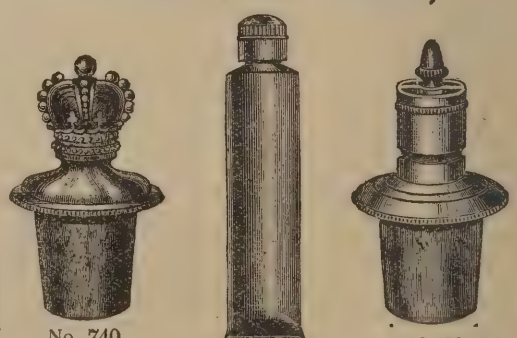
A. H. WIRZ,

MANUFACTURER OF

Bottle Stoppers

—— AND ——

COLLAPSIBLE TUBES,



No. 740. Collapsible Tubes. Nos. 92, 93, 94.

—AND ALL KINDS OF—

Metal Goods

913-917 CHERRY STREET,

PHILADELPHIA, PA.

American Analyst,

Published on the 1st and 15th of each month,

At 19 PARK PLACE, NEW YORK.

EUROPEAN AGENCIES.

On file at "American Exchange," 449 Strand, London; and American Exchange," 35 Boulevard Des Capucines, Paris.

IMPORTANT

TO THE

MEDICAL PROFESSION.

Send your address to THE NEW YORK PHARMACEUTICAL COMPANY, BEDFORD SPRINGS, MASS., for Illustrative Hand-book, **FREE**, containing valuable formula, special directions, and the testimonials of one thousand physicians in favor of the great merits of

HAYDEN'S

Viburnum Compound,

IN FEMALE DISEASES.

Also, the

URIC SOLVENT,

For KIDNEY DISEASES, and complaints arising therefrom.

CORRESPONDENCE.

REFINED (?) LARD.

A STATEMENT ON THE OTHER SIDE OF THE LARD QUESTION.

CHICAGO, *January* 23, 1888.

Editors AMERICAN ANALYST: The name given to the product called refined lard is a misnomer, as the definition of refine given by Webster is to free from extraneous matter. The name ought to be compounded lard and sold as such, and that is the whole matter in a nut shell for which Congress is asked to legislate. There is not one consumer in thousands who knows that any substance is mixed with the pure fat of the hog, but this they do know, that the lard sold as refined is quite a different article to what was formerly sold, and cannot assign a reason, as they are misled by the brand on the packages and are supposed to be supplied with the genuine article.

We have not a word to say against cottonseed oil as an article of food, and let it be sold on its merits and not foisted on the public under the name of another article. The mixture of lard and cottonseed oil alone will not make a marketable article; other ingredients have to be used to give a body. Whilst we are opposed to the taxation of any food product, we cannot well see how the manufacture of an article that robs a legitimate and pure product of its rightful name can be regulated unless under the supervision of recognized authority, and of a necessity a license or tax has to be imposed upon those who find it to their profit to manufacture a product and call it by a name that is a commercial fraud.

We naturally selected lard for legislation, as it is one of the principal commodities dealt in and manufactured by us, and we should like to see other branches of business, wherever adulterations are used, take up the matter that specially affects them.

We notice in the circular letter of Armour & Co., published in your paper, they state "that petitioning manufacturers are moving in this matter for the protection of their private interests." Is not their opposition likely to arise from the same theory? Does it not seem strange that the only two firms found opposed to this movement are those who are the largest manufacturers of so-called refined lard?

We claim our movement is an honest one to regulate the manufacture of this article, and while we would like to see a general law on all adulterations of food, we think every business knows best what is needed in their special line. Pure hogs' lard has been proved by the experience of large consumers to be the cheapest, as three pounds will go as far as five of the compound.

The manufacturers who attempt to screen themselves behind the plea that some unprincipled merchant's cupidity asks that the packages of spurious goods be marked with an honest name, is a sorry one, and they ought to be made as amenable to the laws of the country as the raiser of a check or government bond.

We heartily commend the independent stand taken by you on all adulterations, and hope your efforts will meet with their merited reward.

Yours truly,

LARD COMMITTEE

of the Butchers' National Protective Association.

BOGUS FRESH BUTTER.

NEW YORK, *January* 25, 1888.

Editors AMERICAN ANALYST: I prefer you calling on me when I will take you around to several places of business to show you that bogus sweet creamery butter is sold as fresh churned creamery. That nefarious trade has been carried on for the last few years with the greatest impunity—defying all the adulteration laws. If you desire to see how the Hebrew milkman feeds his Hebrew customers on watered milk I will give you that satisfaction as well. The Jew dealer doesn't care for paying a cash fine because he is only too well pleased to get off with such a punishment. He looks upon that fine as a privilege or a license. But let the authorities send him to the Island for six months each time he adulterates the milk and butter, you will then soon find out that the crooked business will take a turn for the good. It is high time that somebody should rake up and show what the Board of Health is made from, they are a pack of politicians. The Board should appoint inspectors who will rise every morning at five o'clock A. M. and perform their duty faithfully for the payment they receive. How can an honest shopkeeper stand against such rascals? You can call on me any afternoon.

Respectfully yours, B.

ANOTHER YANKEE INVENTION.—The wonderful invention of writing by electricity at a distance of fifty miles, is thus described by the *Pall Mall Gazette:* "Out of the top of a box, which is about the size of an ordinary despatch box, protrudes what has the appearance of a stylographic pen. This, however, is not a pen, but the handle of the 'transmitter,' and its lower end is fixed to a light brass perpendicular bar. Any motion given by the hand—you hold it just like a pen—to the handle of the transmitter is communicated by this bar to two series of carbon disks contained within the box, and, after various adventures among magnets, etc., is carried again to the top of the box, where it is reproduced exactly by a small ink-holding pen, whose point rests on a white paper tape. A clockwork apparatus pulls this tape along at a gentle pace, and after a little practice you find that it is quite easy to move the handle of the transmitter so that the pen shall write legibly on the moving tape. Now, whatever is written on the tape before you is written simultaneously a mile off or it may be fifty miles off, on a similar tape, by a similar instrument at the other end of the wire. The instrument is very compact and apparently efficient." The inventor is Mr. John Robertson, an American.

The Standard of Excellence.

KINGSFORD'S

OSWEGO

Pure and Silver Gloss



STARCH

KINGSFORD'S

OSWEGO CORN STARCH

FOR

Puddings, Custards, Blanc-Mange, Etc.

THE PERFECTION OF QUALITY.

WILL PLEASE YOU EVERY TIME.

Always ask your Grocer for these goods.

COLDEN'S LIQUID BEEF TONIC.

ORIGINAL LABEL:
"Colden's Liebig's Liquid Extract of Beef and Tonic Invigorator."

AN INVALUABLE AID IN THE TREATMENT OF ALL CASES OF DEBILITY.

Established 15 Years. Endorsed by Scores of Physicians. Essentially Different from all other Beef Tonics. Beware of Imitations.

COLDEN'S LIQUID BEEF TONIC consists of the Extract of Beef (by Baron Liebig's process), spirit rendered non-injurious to the most delicate stomach by extraction of Fusel Oil, soluble Citrate of Iron, Cinchona, Gentian and simple aromatics. An official analysis of this preparation by the eminent chemist ARTHUR HILL HASSALL, M. D., F. R. S., and an endorsement by SIR ERASMUS WILSON, F. R. S., is printed on the label of each bottle.

Its Range of Action Embraces all Cases of Debility.

By the urgent request of several eminent members of the medical profession, I have added to each wineglassful of this preparation two grains of SOLUBLE CITRATE OF IRON, and which is designated on the label as "No. 1," while the same preparation, without Iron, is designated on the label as "No 2."

It acts directly on the sentient gastric nerves, stimulating the follicles to secretion and gives to weakened individuals that first pre-requisite to an improvement, an appetite.

☞ *I will, upon application, send a sample bottle of Colden's Liquid Beef Tonic to any physician in regular standing. I leave ask your Dispensing Druggist (if he has not already a supply) to order it. In prescribing this preparation physicians should be particular to mention "COLDEN'S" viz: "EXT. CARNIS. FL. COMP. (COLDEN). It is put up in pint bottles and can be had of Wholesale and Retail Druggists generally throughout the United States.*

C. N. CRITTENTON, Sole Agent,

115 Fulton Street, N. Y.

Please Mention the AMERICAN ANALYST.

BURNETT'S
PERFECTLY PURE
Standard HIGHLY CONCENTRATED Flavoring
EXTRACTS

THE superiority of these Extracts consists in their
PERFECT PURITY AND GREAT STRENGTH.

There is no subject which should more engross attention than the purity of the preparations which are used in flavoring the various compounds prepared for the human stomach.

They are not only true to their names, but are prepared from fruits of the best quality, and so highly concentrated that a small quantity only need be used.

JOSEPH BURNETT & CO., Boston, Mass.

CORSETS.

THE SUBJECT CONSIDERED FROM OPPOSITE STANDPOINTS.

(*Concluded.*)

A few of the most palpable changes brought about by corset pressure have thus been briefly described. There are many others as much more important as they are more subtle and difficult of proof, such as the disturbances of abdominal circulation, the effect on digestion, the limitation of exercise, and the slowly increasing action on the general health—questions of disturbed physiology which I hope to attack in the future. The necessary observations accumulate slowly. The conclusions reached at this time may be tabulated as follows:

1. The maximum pressure at any one point was 1.625 pound to the square inch. This was during inspiration. The maximum in quiet breathing was over the sixth and seventh cartilages, and was 0.625 pound.

2. The estimated total pressure of the corset varies between thirty and eighty pounds—in a loose corset about thirty-five pounds, in a tight corset sixty-five pounds.

3. Within half a minute after hooking the corset such an adjustment occurs that a distinct fall in pressure results.

4. The circumference of the waist is no criterion of tightness. The difference between the waist measure, with and without corsets, gives no direct clew either to the number of pounds pressure or to the diminution in vital capacity. Relaxation and habit seem to affect these factors largely.

5. The capacity for expansion of the chest was found to be restricted one-fifth when the corset was on.

6. The thoracic character of the breathing in women is largely due to corset wearing.

7. The thoracic cavity is less affected by the corset than the abdominal.

8. The abdominal wall is thinned and weakened by the pressure of stays.

9. The liver suffers more direct pressure and is more frequently displaced than any other organ.

10. The pelvic floor is bulged downward by tight lacing one-third of an inch.

SEA-URCHIN EGGS.

A NEW EDIBLE FROM THE SEA.

A new edible delicacy of marine origin, and surpassing, in the opinion of many Southern gourmands, the finest oysters, is about to be introduced into this country. A supply of the true Mediterranean sea-urchins, in good condition, is to be consigned to our market, and epicures will be asked to try the eggs of the echinidean after the fashion of Marseilles—that is, by eating them off the shells, raw and uncooked. The sea-urchin, which scientific men, with the playful simplicity characteristic of the kind, have agreed to designate the "strongylocentrotus," is an article of food in many parts of the world, as most people are probably aware. Hence one of the common names it bears among fisherfolk who have no reputation for learning to keep up, and who call it the "sea-egg." But all along the shores of the Mediterranean the five-celled rosette forming the inside of the prickly creature is esteemed one of the tastiest morsels yielded by the sea. Strangers visiting the Marseilles fish market will see basket after basket there filled with these browny green and violet colored "hedgehogs of the deep." They are deftly opened by the fishwives, the left hand being protected against the sharp prickles by a stout cloth wrapped around it; the stomach-sack is cut out, and the fine orange-colored eggs in the centre exposed and handed upon the shell to the customers ever ready for the dainty. These eggs are only to be found in the "urchin" between the months of October and May—that is, about the same time as the oyster is in season. At other times the eggs are missing, and many worthy people have pronounced the creature good for nothing because they happened to capture and open it at the wrong season of the year. The urchin fishery, owing to the great demand for the crustacean in Southern Europe, is one of the most important in the Mediterranean. The creatures frequent rocky ground, and in the form of round, prickly balls they are found, hundreds together, a few feet below high-water mark in the shoals of the Spanish, French and Italian coasts. They are captured by means of a cleft stick, with which the fisher pokes about in their haunts, and often, too, by divers. In the Bay of Naples nothing is more amusing than to watch the urchin-fishers at work in search of their prey. Rowing to the spot where they are carrying on operations, one may see some scores of heads bobbing about in the water, and probably an equal number of pairs of legs, all belonging to bodies that are invisible. Suddenly a head will go down and a pair of legs come up; then, as unexpectedly, one of the pairs of legs will go down and a head bob up. "A puzzling spectacle," says Mr. R. Jones, who has well described the fishery, "and a constant 'vicissitude from heels to heads, and from heads to heels.'"

HOW WE CATCH COLD.

MORE THROUGH THE NERVES THAN THROUGH DRAUGHTS.

Cold is not the only factor in the production of catarrh. There is a collateral cause, and a most important one, in certain depressed conditions of the nervous system, which is too little known and appreciated. In healthy conditions of the nervous system, provided reasonable precautions are taken against cold, there is enough vitality in the organism to resist its injurious influence. The nervous system is, in fact, the guardian, controller, and prime regulator of animal heat or body temperature, and its slightest failure to fulfil its responsible duties—the least relaxation of its constant vigilance—renders us liable to fall a prey to cold. The following suppositious cases will afford an illustration: An individual, who habitually drives about in an open conveyance with perfect freedom from catarrh, happens on one occasion to fall asleep when he is out, and the very next day has cold. The explanation of the phenomenon is to be found in the fact that during sleep nervous energy is lowered and the system therefore less able to withstand the injurious effects of cold. If we assume that the individual was also in a state of intoxication at the time, the damage done by cold would be more serious, as the depression by alcohol is superadded to that of sleep. It is therefore not surprising to find that inflammation of the lungs is frequently contracted under such circumstances. We instinctively acknowledge the nervous depression during sleep by taking the precaution to throw a rug over the knees before our forty winks on the dining-room sofa. A timid woman comes home one night pale and ghastly with fright, having encountered a spectre clad in white, which she calls a "ghost." In a day or two she develops a cold, for which she cannot in any way account. Fear acts as a depressant to the nervous system, crippling its powers of resisting the action of cold; hence the phrase, "shivering with fear." Similarly, innumerable events of daily life tend to irritate, depress, or excite the nerves and render them unfit for maintaining the body temperature against the fluctuations of weather and climate. During these unguarded moments a trifling exposure to cold or damp is sufficient to induce catarrh. It is known that stout boots, umbrellas, and wraps, though preservatives in their way, are not by any means the only precautionary measures to be adopted; that we must endeavor to strengthen the nervous system, if it be defective, and that when we are compelled to expose ourselves to cold or wet when the nerves are depressed from temporary causes, such as fatigue, anxiety, grief, dyspepsia, or ill humor, we should be specially careful to guard against cold.

TELEGRAPH SPEED.—When the first electric telegraph was established, according to the British postmaster-general, the speed of transmission was from four to five words a minute on the five-needle instruments. In 1849 the average rate for a number of newspaper messages was seventeen words a minute. The present pace of the electric telegraph between London and Dublin, where the Wheatstone automatic instrument is employed, reaches 462 words a minute; and thus what was regarded as miraculous sixty years ago has multiplied a hundred fold in one-half century.

THE AMERICAN ANALYST.

WHAT THE PUBLIC AND THE PRESS SAY ABOUT IT.

A Wide Awake Reader.

A correspondent, writing January 18, from Dallas, Texas, enclosing his subscription, concludes his letter thus: "Permit me to add that about two years ago I found a formula in another journal, credited to you, from which my firm made more than $100 in one summer.

Some New Features.

Among the new features of the AMERICAN ANALYST, of this city, for the coming year, will be a series of papers on American wines and food adulterations from a national point of view.—*N. Y. Tribune, Jan.* 14, 1888.

What Most of Our Exchanges Do.

We have had occasion to clip frequently from the columns of the AMERICAN ANALYST.—*Detroit Health Record, January*, 1888.

A Successful Effort.

A copy of a bright semi-monthly journal, entitled the AMERICAN ANALYST, has been received at this office. Its purpose is to advocate pure food, the suppression of adulteration, and present advice for physicians, druggists and dentists, and we may say this purpose is very successfully accomplished in the number before us.—*Indiana Arcadian, Jan.* 20, 1888.

AMERICAN ANALYST

—) AND (—

PRACTICAL COOK AND HOUSEKEEPER.

A SEMI-MONTHLY JOURNAL OF PURE FOOD, THE SUPPRESSION OF ADULTERATION,

AND EVERYDAY ADVICE TO THE PHYSICIAN, DRUGGIST AND DENTIST.

Office, 19 Park Place. [Entered at the Post Office, at New York, as Second Class Matter.]

VOL. IV.—No. 3. NEW YORK, FEBRUARY 1, 1888. Whole No. 75

All Postmasters will receive subscriptions for the **AMERICAN ANALYST.**



AMERICAN DRINKS.

HOW THEY BEWILDER THE BRITISH INTELLIGENCE.

"Why the stimulants described," says a contributor to the London *Evening Standard* in an article on the above subject, "are called American we cannot say, unless it is contended that they have been invented in the New World, and brought to perfection by the genius of the artist who presides behind that American institution, 'the bar.' The ingredients they contain are such as we are all familiar with. Ice forms a principal part of the greater number, and the taste, and even the quality, of the spirituous staple is effectually disguised by means of bitters, sugar, and other extraneous substances. For this reason, probably, they are popular at once with their buyers and sellers. Any kind of stuff—whiskey which left the distillery last year, brandy which was made in a New York cellar, rum of the vile New England order, gin which smells of turpentine—can all be made to pass muster if the tongue is deadened with ice, or the taste destroyed by some pungent drug in the shape of 'bitters.' This extraordinary mixture serves to enable the inferior article to pass muster with the drinker. The 'short' drink is agreeable to the palate, and the 'long' one is so flavored with syrups, and cooled by crushed ice, that it is hard to say what it contains. Of the hundred and sixty recipes in the book before us the majority are of this nature. Eggs and ice are, indeed, the most harmless of their components, though in no case can they be said to contain anything absolutely noxious, if only the composition of the bitters can be assured, and the quality of the spirit be certified to be what in the great number of cases it is not. Lemon juice, curacoa, brandy, rum, champagne, yellow chartreuse, the yolk of eggs, cinnamon, ice, claret, maraschino, mint, and so forth are mixed up in so extraordinary a manner that a man chary of his digestion feels that there is little to choose between a 'long' drink and a 'short' one, except, indeed, that the latter contains less than the former. The 'Punches for Parties,' the 'Stock Drinks,' and the hot ones seem equally appetizing, and from the point of the morning's reflection equally dubious, so that the cautious man will be apt to fall back upon what are called the Temperance Drinks, since few of them contain anything more suspicious than lemon juice and iced water.

"The exuberant fancy of the inventor is not the least among features of this branch of cuisine. Some of the Cups and Punches are familiar enough friends, and the various lemonades are not much of a revelation to any one who has lived long in the south of Europe. But when we find in the list of 'long drinks,' in addition to the usual 'slings' and 'juleps' and 'cocktails,' a Cosmopolitan Delight, a Fisherman's Prayer, a Golden Fizz, a Morning Glory, an Old Chum's Reviver, a Spanish Delight, and the familiar John Collins, and Stone Fence, our curiosity is aroused. The 'short drinks'—the Alabazam (which is a compound of ice, brandy, bitters, and curacoa), the Bosom Caresser, the Brandy Daisy, the Brandy Seaffa, the Brandy Crusta, the Chest Protector, the Gin Swizzle, the Prairie Oyster (which is an egg treated like the mollusk from which it takes its name), the Sam Ward, the Settler, the Stars and Stripes, the Too Too, and a host of similar compounds—are about equally doubtful, and almost as little varied. They seem all to ring the changes on much the same ingredients. In almost none of them can the quality of the spirit or the wine be detected, since ice and strong bitters effectually deaden the palate to anything like a due appreciation of its flavor. This, indeed, is their worst feature. They are cooling and stimulating, agreeable to swallow, and possibly for a time comforting to the inner man. But it is hard to believe that such beverages can be wholesome. They must be accepted on the credit of the compounder, or on the assurance which the price paid affords, since no one can distinguish a brand or a bouquet in the pleasant mixture of drugs known as an American Drink. It is, indeed, open to question whether the very purpose for which they were originally invented was not to hide evil qualities of the whiskey and brandy, which in the earlier days of the New World were much more common than the better ones are nowadays. In early times there was scarcely any check put upon distilling. Every settler turned his rye or his maize into a cask of whiskey, or distilled a certain portion of his peaches into brandy. Beer was little drunk and less appreciated, and when a farmer wished a 'long drink' he applied himself to his home-made cider. But whiskey was the stimulant most in demand. It was cheap, portable and strong, and in malarious districts was supposed to possess potent virtues against that all abounding 'fivir and agur' of which Colonel Chollop expressed so unbounded a contempt. The gold digger who had to wander far afield found whiskey the stimulant easiest to carry, and, moreover, the only protection against the bite of rattlesnakes. Hence 'snake poison,' as it is facetiously called, was most in demand in the Far West, and in the malarious districts of the rivers flowing into the Mississippi River, or along the banks of that flood. Here every other person was subject to attacks of the prevailing malady. His whole frame was shaken by the ague, and when 'the shakes' came on, popular tradition looked to rye whiskey as the only remedy which could alleviate the trouble, or impart something like vigor to the enervated bodies. These people were the dram drinkers of America. They drank the coarse new whiskey made by themselves in its native state. In towns, its inferior quality was disguised by bitters, by ice, or by sugar. Hence the rise of the 'fancy drinks' of the New World, and the partiality of the old Virginia Planter for a julep, which we learn from the latest authority on the subject owes its merits to the flavor of mint, and if 'served with straws' is 'a drink fit for a king.'

"In other parts of the States, the habitual tippling which, perhaps owing to the variety of American drinks, is supposed to be so common, was never very pronounced. As a rule, indeed, the North American drinks less than his English cousin. The taste for whiskey was not native. It was imported by the immigrants from Ireland, where, nowadays, porter is rapidly taking the place of potheen. The Irish centre in the cities, where what drunkenness is found is almost confined. And, curiously enough, just as the Irish are blamed for carrying to the New World a love for an old habit which they had better left behind with their Old World weaknesses, the German settlers introduced a liking for light beer, which is rapidly revolutionizing the social habits of North America. Hence, all over the United States the German Lager Beer Brewery, with the portrait of Gambrinus as a sign-board, presided over by a Rhinelander or a Suabian, is a familiar feature. The German, however, does not only drink the beer himself, but he has inoculated his neighbors with a taste for it. The result is that it is fast becoming the national drink of America, and even in the West is displacing the vile whiskey which was in former days the almost universal stimulant. From lager beer to lemonade is not a wide jump. Indeed, the German examined in a Western court denied the former to be intoxicating, and as he 'drank forty or fifty glasses of it a day' he ought to know, though he could not vouch for the sobriety of the man who 'made a hog of himself.' But the miners in Colorado and California, after being weaned from whiskey by beer, are reported to be abandoning beer in favor of lemonade and water. The 'bar-keep' is no longer the important personage he was in old days. His shirt breast may be as resplendent and his diamonds as gorgeous as ever. But he no longer receives the salary of a territorial Governor, or the deferential familiarity accorded to the owner of what was the best paying business in every mining camp. Bargains may still be clinched at the bar, and vinous hospitality indulged there. Still, lager beer has so effectually taught the New American the virtues of John Barleycorn that it is open to debate whether the 'long drinks' and 'short drinks' of his native land will not in a few years be more patronized in London and Paris than in San Francisco and New York."

American Analyst,

Published on the 1st and 15th of each month.

Subscription, - - - - - - $1 per year.
Single Copies, - - - - - - 5 cents.
Subscriptions to foreign countries, - $1.50.

Remit by Express Money Order, Draft, P. O. Order, or Registered Letter.

Advertising rates on application.

THE ANALYST PUBLISHING CO., *Publishers.*

H. LASSING, M. D., } *Editors.*
T. P. McELRATH, }

No. 19 Park Place, ... New York.

NEW YORK, FEBRUARY 1, 1888.

ANSWERS TO CORRESPONDENTS.

PHARMACY.—*What is hot soda water?* There is no such thing. What it is generally supposed to be, hot carbonated water, is an impossibility, as heat drives off the carbonic acid gas. The "hot soda water" generally dispensed from drug store counters is only hot water and syrup.

BARCLAY.—*Which will best prevent a black eye, the application of cold or heat?* What produces a black eye is the breaking of the capillaries or smaller blood vessels, causing an infiltration of blood in the tissues around the eye. When the blow is first received the application of cold will check any further flow, but this should be quickly followed by the application of hot water to cause absorption.

VIATOR.—*Is there any scientific means for the protection of ships against fires?* The electric heat indicators are valuable means of preventing spontaneous combustion at sea. They consist of thermometers, protected by iron tubes, provided with platinum wires, and connected to a system of electric bells and indicators on deck. These thermometers are distributed among such dangerous cargoes as coal, cotton, etc., liable to spontaneous combustion. Should any undue heat arise in any part of the cargo, the mercury in the thermometers will rise, make contact with the platinum wires, and give an instantaneous alarm on deck, at the same time indicating the exact spot where such dangerous heat may exist.

W. S.—*Why does touching very cold iron blister a person's skin?* When bodies of different temperature come in contact, heat passes from the hotter to the colder at a rate proportioned to the difference in temperature, the closeness of contact and the rate at which the bodies conduct heat. When the finger touches the cold iron the heat of the finger passes to the iron, and the iron, being a good conductor, carries the heat from the place of contact faster than the finger, a poor conductor, can supply it; therefore, if the iron be very cold, the moisture of the finger in contact with it freezes, and the finger is stuck to the iron by a film of ice which clings to each.

MOXIE MIXED.

THE MOXIE COMPANY LOSES ITS SUIT AGAINST THE AMERICAN ANALYST.

(*From the N. Y. Tribune, Jan.* 19, 1888.)

The Moxie Nerve Food Company, of Lowell, Mass., brought a suit in the Supreme Court against Henry Lassing and another, alleged proprietors and publishers of the AMERICAN ANALYST, to recover damages against the latter for two certain publications published in that journal. The first cause of action was the publication of a statement that certain ingredients, naming them, were an excellent imitation of Moxie. The second was for publishing at a later period a statement, "Moxie, its True Inwardness Exposed;" "the famous nerve food a nerveless fiction," and in which article it stated it had caused an analysis of the article Moxie to be made by Dr. Francis Wyatt, and there was published in connection with the alleged libellous matter the chemist's result of the analysis.

The cause came on for trial yesterday. When it was called the counsel for the defendants moved to dismiss the complaint upon the ground that the plaintiff was a corporation, and could not be libelled as an individual could be, but could only maintain an action for libel when it showed by its pleadings that it had incurred special damages by reason of the libel, and such special damages were set out in the complaint in detail, and that no special damages were set out in this complaint as the result of either of said causes of action. The counsel made the further point that if these articles were libellous, they were of a thing, and while conceding that a corporation might recover damages for a libel injuring its property, it could only recover such damages which were special and which could be proved to be the actual result of such publication; and before a corporation could recover at all, it must plead special facts, showing such special damages. The counsel made the further point in reference to such cause of action, that a publication stating that a compound of certain ingredients was a good imitation of Moxie could in no sense be considered libellous and was not actionable.

The court, after hearing argument, granted the motion dismissing the complaint as to the first cause of action; and as to the second, permitted the plaintiff to withdraw a juror, with leave to move at Special Term to amend his complaint, setting up the facts showing that he had sustained special damages by reason of the second publication above mentioned, upon the payment of costs. Samuel Randall appeared for the plaintiff, and Cornelius A. Runkle and Percy McElrath for the defendants.

(*From the Journalist, Jan.* 21, 1888.)

A lawsuit involving some points interesting to newspaper publishers came to an abrupt termination in Part 2 of the Superior Court, last Tuesday. The first case called that day by Judge Freedman was the suit of the Moxie Nerve Food Company against Messrs. Lassing & McElrath of the AMERICAN ANALYST for libel, the libel consisting in the publishers of that paper having printed a chemical analysis of "Moxie," showing it to be simply a palatable beverage containing no ingredients competent to act upon the nervous system. For this exposure and the alleged libel it embodied, Dr. Thompson, the owner of "Moxie," demanded $25,000 as damages, but without specifying in what manner or to what precise extent he had been "damaged" by the publication. When the jury was impaneled, before the plaintiff's attorney had begun to open the case, counselors Cornelius Runkle and Percy McElrath, who appeared on behalf of the AMERICAN ANALYST, moved for a dismissal of the action on the ground of the inadequacy of the statement of damages. Thompson's lawyer was utterly nonplussed at this attack, and made a lame attempt at remonstrance, but Judge Freedman peremptorily dismissed the complaint as to one of the causes of action, and gave the plaintiff leave, on the payment of costs, to apply to the Special Term for permission to amend the complaint as to the second count.

THE PURE FOOD CONVENTION.

The Pure Food Convention met according to programme in Washington on January 19th, and adjourned on the 20th, after formulating a bill to present to Congress, and making some changes in the plan of the permanent organization. In this latter respect a sensible reform was inaugurated by adopting the title of "The National Pure Food Association," and the selection of an entire new list of officers, comprising Mr. J. W. Callahan, of Nyack, N. Y., as President. Secretaries—Herman W. Grannis, Chicago; Benj. Johnson, Boston, Mass.; Louis W. Buckley, Philadelphia. Treasurer—Finley Acker, Philadelphia, Pa. Vice-Presidents—Hugh Graham, Cohoes, N .Y.; Geo. A. Michell, Newark, N. J.; P. F. Smith, Pittsburg, Pa.; D. W. Hand, Minneapolis, Minn; W. H. Sharpley, Denver, Col.; Jos. F. Sind, Milwaukee, Wis.; Dr. A. S. Merrill, St. Louis, Mo.; Geo. H. Bond, Boston, Mass.; W. S. Grannis, Chicago, Ill.; Charles Herman, Cleveland, O.; O. A. Gill, Baltimore, Md.; A. E. Hanlin, Detroit, Mich.; Geo. A. Faccus, Wheeling, Va. This effectually wipes out the absurdity which has been strutting about so pretentiously during the past year under the self-bestowed name of the "National Association for the Prevention of Adulteration," and disposes finally, it is to be hoped, of the curious little clique who endeavored to "run" that pseudo organization for their own personal benefit. The new officers are, so far as we are familiar with their names, all men of business standing and sagacity, and we may look now for an exhibition of common sense where hitherto unreason has held high sway. A bill differing widely in its provisions from that which has been so extensively discussed during the year was adopted clause by clause, and indorsed over to Congress, for acceptance by that body. We have not space for the entire text of the bill in this issue of the AMERICAN ANALYST, but will present it to our readers in our next issue. The dangerous clause of the rejected bill, relating to inter-State transportation, was expunged, and the proposed bill prohibits the manufacture and sale of adulterated food and drugs only in territory under the jurisdiction of the National Government. It provides for the establishment in the Treasury Department of a Bureau of Adulteration, with power to publish the analyses of adulterated articles, but without power to institute suits against manufacturers and dealers. Foods or drugs offered for importation and suspected of being adulterated are to be subjected to analysis, and if condemned are destroyed unless the consignee will pay expenses and give bonds for their re-exportation within six months. By thus restricting the operation of the law to localities wholly under national jurisdiction, and to ports of entry, all the offensive features of the former bills, that have been so vigorously discussed, have been done away with. In its present aspect, moreover, we are inclined to believe that the whole brains of the projected measure have been knocked out by the limitations thus imposed upon its operation. But the bill has not yet become a law, and many modifications and changes may be introduced into it before its final adoption.

THE ADULTERATION OF LARD.

A large number of gentlemen interested in the manufacture of lard and its imitations appeared before the Senate Committee on Agriculture, in Washington, Jan. 25, in reference to the bill to require lard compounds to be taxed, inspected and stamped and their makers to be licensed. The compound makers, through their representatives, acknowledged that they used cottonseed oil and other wholesome articles to mix with pure lard, and opposed the bill because their product was a good and healthful one, and as such should be encouraged. The consumers, they argued, were not making any complaint. This measure was prepared by business rivals who were unable to compete successfully with them. The supporters of the bill told the committee that the unlicensed production of lard mixtures and the unrestricted sale of these as pure lard was certainly undermining and destroying one of the most profitable branches of American industry. They were indifferent with regard to the rate of tax, and only urged a tax because of their understanding that the measure would otherwise be unconstitutional. Nor were they opposing in any way the production of compounds made of healthful ingredients, such as cottonseed oil; but the license under which an honorable man could make such compounds now sheltered the less honorable manufacturer, who gathered the vilest of greases and flooded the market with them, stamped and sold as pure lard. The purpose of the proponents of the bill was to secure inspection of lard products and compel the manufacturers to stamp them according to their composition. W. W. Kimball, of Boston, the chief speaker for the bill, was questioned rather closely with regard to a statement that there were many unprincipled manufacturers in the country who were making deleterious lard compounds and selling them as pure lard. He could not give any names at

once, but if the fate of the measure depended on it he promised to send the committee a hundred names of such manufacturers. The committee asked him to furnish the names of twenty such manufacturers with the proof of their practices, and this Mr. Kimball promised to do, or to come and say to the committee that he was all wrong.

OMITTED CREDITS.

We publish in another column several pleasant comments upon the AMERICAN ANALYST clipped from our recent correspondence and exchanges. It is gratifying to see our efforts meeting with public approval, and to be thus publicly credited with the good we are accomplishing. Similar endorsement, though less frankly accorded, is given us by a large number of papers which reprint interesting matter from our columns but forget or neglect to state their indebtedness to us. The *New Age*, published in London, England, reprinted entire in its December 31st issue an article on the Care of the Teeth, written for the AMERICAN ANALYST and published in our issue of December 15. It was written for us by Dr. Secord, of this city, but in the *New Age* it appears as written for that paper by "Sady Miller." In like manner the Philadelphia *Sunday Dispatch*, of January 15th, published as its own two long papers, which appeared originally in the AMERICAN ANALYST of December 1st, 1887, relating respectively to Laundry Dangers and the Care of the Hair. We admire enterprise on the part of our contemporaries, but we object to paying their expenses.

THE ARTIFICIAL HONEY HUMBUG.

The absurdity of artificial honey has been exposed so often that it might seem hardly worth while to notice the subject again. The subjoined paragraph, however, has been receiving such currency in the daily papers that we reproduce it in order to repeat that the manufacture of artificial honey-comb has thus far been a failure:

"I never saw honey look like that," remarked a reporter, who had ordered toast and honey for his breakfast. "I never saw a honey-comb look so white or be so uniform." "Well, sir," replied the waiter, "I'll let you into the secret. That is manufactured honey. The comb is manufactured now of a white wax. Moulds are made to the shape and size required and the heated wax is poured in and becomes an imitation honey-comb. A piece of this comb is placed in the jar and the syrup poured in. They can't make a good imitation, though; nearly every one who calls for honey detects the imitation. The wax is whiter, and then it is unpleasant if it should get into the mouth. It is much cheaper than real comb honey and sometimes the supply of honey runs short and the manufactured honey has to be used."

VOLAPÜK.

A PRACTICAL COURSE OF SELF-INSTRUCTION IN THE UNIVERSAL LANGUAGE.

LESSON III.

52.—(1.) The possessive or genitive case (singular) always ends in *a*.

Ex.: God, god. God*a*, God's.

(2.) The dative case (singular) always ends in *e*.

Ex.: flen, the friend; flen*e*, to the friend

(3.) The accusative or objective case (singular) always ends in *i*.

Ex.: blod, the brother; blod*i*, the brother.

Note.—The English language has only three cases: the nominative, the possessive, the objective. Volapük, however, has five cases.

(4.) The vocative (5th case) is denoted by an *o* placed before the noun like an interjection.

Ex.: men, man; O men! O man!
O mens! O men!
man, man; O man! O man!
O mans! O men!

Ex.: Good mothers make intelligent men of their sons.
Mots gudik mekofs manis lisanik sonis ofsik.

Women, boys, men and girls are human beings.
Voms, puls, mans, e ji-puls binoms mens.

(5.) The genitive plural always ends in *as*.
(*a* denotes the case, *s* the number.)

(6.) The dative plural always ends in *es*.
(*e* denotes the case, *s* the number.)

Ex.: dom, the house; domes, to the houses.

(7.) The accusative (objective case) plural always ends in *is*.
(*i* denotes the case, *s* the number.)

Ex.: glät, the glass; glat*is*, the glasses.

53.—(1.) In Volapük diminutives are formed by affixing *il* to the primitive word.

Ex.: dom, house; dom*il*, small house.

(2.) Adjectives are formed by adding *ik* to the primitive word.

Ex.: good, goodness; gud*ik*, good.

(3.) The comparative degree is formed by adding *ikum* to the primitive word, or *um* to the adjective.

Ex.: gud*ik*, good; gud*ikum*, better.

(4.) The superlative degree is formed by adding *ikün* to the primitive word, or *ün* to the adjective.

Ex.: gud*ik*, good; gud*ikün*, best.

(5.) The nine numerals end in *l*.

Ex.: bal, one; tel, two; kil, three.

(6.) The decimals ends in *ls*.

Ex.: bal*s*, ten; tel*s*, twenty; kil*s*, thirty

(7.) Numeral adjectives end in *id*.

Ex.: kil*id*, the third.

(8.) Numeral adverbs end in *ido*.

Ex.: kil*ido*, thirdly, in the third place.
fol*ido*, in the fourth place, etc.

(9.) Numeral words denoting *repetition* all end in *na*.

Ex.: balna, once; telna, twice.
kils*na*, thirty times; fol*na*, four times.

(10.) Numeral words denoting *distribution* take the letter *a* before them which is kept quite distinct.

Ex.: a lul, every (each) five.
a mäl, " " six.

(11.) Numerals of ratio are formed by suffixing the letters *ik*.

Ex.: folik, fourfold; velik, sevenfold.

(12.) Numeral nouns all end in *el*.

Ex.: jö*el*, the eight; zülel, the nine.

(13.) In Volapük, verbs are formed from the numeral words by adding *ön* to the numeral to make the infinitive mood.

Ex.: tel, two; telön, to double.
vel, seven; velön, to multiply by seven.

(14.) The affixes for the verbs, are:

SINGULAR.

1st person,	*ob.*		Ex.:	bin*ob*, I am.
2d "	*ol.*		"	dun*ol*, thou dost.
3d "	*om*	(masculine).	"	löf*om*, he loves.
" "	*of*	(feminine).	"	kan*of*, she can.
" "	*os*	(neuter).	"	däl*os*, it may.
" "	*on*	(indefinite).	"	vil*on*, one will.
" "	*ok*	(reflective).	"	leton*ok*, one lets one's self.
2d "	*ons*	(polite).	"	gol*ons*, you go.

(15.) PLURAL.

1st person,	*obs.*		Ex.:	no*lobs*, we know.
2d "	*ols.*		"	pük*ols*, you speak.
3d "	*oms*	(masculine).	"	pen*oms*, they write.
" "	*ofs*	(feminine).	"	giv*ofs*, they (females) give.
" "	*oks*	(reflectively).	"	klotom*oks*, (also klotomo*sok*), they dress themselves.

Prefixes for the tenses of the active verbs:

(16.) Imperfect or past tense, *ä*.

Ex.: äfin*ol*, thou finshedst.

(17.) Perfect, *e*.

Ex.: eget*om*, he has received.

(18.) Pluperfect, *i*.

Ex.: *i*plan*of*, she had planted.

(19.) Future, *o*.

Ex.: *o*dlin*obs*, we shall or will drink.

(20.) Future perfect, *u*.

Ex.: *u*kip*oms*, we shall or will have kept.

Prefixes for the tenses of the passive verbs.

(21.) Present tense, *pa*.

Ex.: *pa*lövfols, thou art loved.

(22.) Imperfect or past tense, *pä*.

Ex.: *pä*selon, one was sold.

(23.) Perfect, *pe*.

Ex.: *pe*lilaidoms, they have been read.

(24.) Pluperfect, *pi*.

Ex.: *pi*logom, he had been seen.

(25.) Future, *po*.

Ex.: *po*nulobs, we shall or will be renewed.

(26.) Future perfect, *pu*.

Ex.: *pu*stopon, one shall or will have been stopped.

(27.) The subjunctive mood is formed by the syllable, *la*, kept distinct from the verb.

Ex.: pelob-*la*, that I may pay.

(28.) The imperative mood is formed by the syllable *öd*.

Ex.: domols*öd*, stay in (also ös! or öz!

(29.) To form a noun into a verb in the infinitive mood add the syllable *ön*.

Ex.: lif, life; lifön, to live on.
löf, love; löfön, to love.

(30.) The participle is always formed by the affix *ol*

Ex.: fulöl, filling; liföl, living.

(31.) The affix for the interrogative form is the syllable *li?*

Ex.: fitoms-*li?* are they fishing? or, do they fish?

(32.) The affixed sign by which the name of a noun reproduces that of a quality, a symptom of the mind, is the syllable *äl*.

Ex.: kap, head; kapäl, sense, genius; lad, heart
ladäl, kindness, heartiness.

54.—Proper names. (Nems lönik.) The plural of proper names that end in a hissing sound, as c, j, s, x, z, may be formed by doubling the last letter, and pronouncing the word sharply.

Ex.: Mice, Darius, Blejj.

55.—However, in Volapük, the standard rule for the plural of nouns is, without exceptions.

(1.) The plural always ends in a hissing sound.

(2.) If the singular of proper names ends already in (c, j, s, x, z), (which is very seldom the case in Volapük), the last letter is doubled, and the word expressed short and sharply, as in 54.

(3.) If the singular does not end in c, j, s, x, or z, an *s* is added for the plural; and this settles the rule for the plural altogether.

56.—Names of individual persons. (Pösodanems.)

(1.) In Volapük, the second name of persons is put before their Christian names.

Ex.: Not Joseph Bach, but Bach Joseph, Bah Yosef.

(2.) Volapük writes a name just *as* it sounds, exactly as it is read.

Ex.: Consn, Cems (Johnson, James).

(*To be continued.*)

PARCHMENT BEARINGS.—Experiments are being made on Prussian railways with axle boxes fitted with bearings of vegetable parchment in place of brass. The parchment is strongly compressed before being used, and it is thoroughly dried to prevent subsequent shrinkage. Wooden rings are placed on the outside of the bearings, fitting the collars of the journal. An emulsion of water and oil and all the mineral oils are used as lubricants. The parchment soon becomes impregnated with oil, and is able to go a long time without a renewal of lubrication. It is between the body of the journal and the thin edge of the parchment sedgments that friction takes place. The claim is made that these compressed paper bearings make a tough material that is superior to metal. Such bearings are also in use in a German saw mill with satisfactory operation.

POISON IN ICE.

THE WINTER FILTH HARVEST GARNERED FOR METROPOLITAN CONSUMPTION.

How the Ice Crop is Secured and What it has been Found to Contain.

[The following article, descriptive of the manner in which Hudson River ice is cut and stored, is republished from the N. Y. *World* of January 22, by the courtesy of Col. J. A. Cockerill, managing editor of that paper. The AMERICAN ANALYST was among the first to call attention to the probable presence of bacterial life in ice, which has received such emphatic confirmation through the investigations of Prof. Pruden. A glance at some of the cuts given below will convince the reader that the crystalline brilliancy of the ice in his glass of water is by no means a guarantee of its freedom from impurities, the introduction of which into the system might be as injurious to health as they certainly are offensive to the imagination.]



LAST year the cutting of ice on the Hudson River began on Jan. 3, at twelve and a half inches, and by the end of the month the houses were all full. This year the crop has been backward and little cutting has been done until the last few days, when the cold snap gave some assurances of a big gathering. Every day now the force upon the river increases and more men are going to work each morning in order to get in the crop within the next few weeks. There was but 15 per cent. of last year's crop carried over, and the icemen are rejoicing in the promise of a good year. There are about seven thousand men and eight hundred horses



ICE HOUSE FRONTS.

employed along the river during the ice harvest, and the stream presents a stirring, busy appearance about the many huge ice houses from morn till night, and the air is filled with the rasping sound of the scrapers and the shouts of the men guiding their horses over the slippery field.

There is a settled gloom upon the brow of the Albany ice gatherer, however, which is caused by Prof. Pruden's recent alarming discovery of many millions of bacteria in the clear crystal cakes of Troy and Albany's frozen sewage. The icemen, one and all, adhere to the ancient and firmly rooted belief that ice purifies or "purges itself," as they express it, as it freezes, and excitedly ask us to look at the clearness and brilliancy of their goods.

Regarding the bacteria, one man told me that he really believed that they were good things to have in ice anyway. He said ice was probably like vinegar, and unless it was "alive" it was not good. Notwithstanding this, the professor declares that the more bacteria there are in the ice the more clear and brilliant it appears. This, of course, only increases the ire of the angry icemen. In investigating the matter as far as superficial examination is concerned, I found that many of Pruden's premises are so correct as to cause the

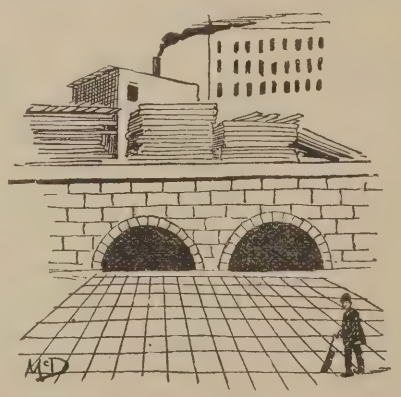


ICE HOUSES BETWEEN TROY AND ALBANY.

people of New York who are addicted to the use of ice in their beverages to view with more or less alarm, mixed with some astonishment, the condition of the river where most of their ice is cut.

The total storage capacity of the Hudson River ice houses, from Troy down to Poughkeepsie, is more than 3,000,000 tons. Between Saugerties and Albany there are about one hundred houses, a dozen of which are located between the latter city and Troy. That the water is in a most filthy condition is apparent to the most casual observer, and when we reflect that Troy alone empties into the stream 8,000,000 gallons of sewage daily, to say nothing of Cohoes's and Lansingburg's contribution, we need no statistics to assure us that it is unfit for drinking purposes even before Albany's 90,000 inhabitants add to its filthiness. Yet here, where dozens of sewers are pouring into the river their volumes of contamination, is cut and housed more than 400,000 tons of ice. This ice does not, as is popularly supposed, go to the breweries for the cooling of beer or to the festive undertaker, which is all it is fit for, but is sold in bulk to the larger companies or shipped to the city dealers to be used for drinking purposes.

The simple facts, it would seem, are sufficient to call for a universal condemnation of its further use, admitting, of course, that the presence of large quantities of sewage is injurious to the human system, upon which there may be some differences of opinion. Into the Albany Basin, which is an enclosure containing thirty acres made for dockage, fifteen sewers, containing the waste of 30,000 people, empty. No ice is cut in the basin, as it is filled with boats; but across the river, all about its outlets, and between the bridges, stretch the



THE SEWERS—A NICE PLACE TO CUT ICE.

long lines of ice cutters, as far as the eye can reach, busily engaged in harvesting the frozen filth for their brothers' use down the stream. From the outer edge of the dyke protecting the basin are emptied the carts which contain the snow cleared from Albany's streets with its accompanying nastiness. This melts during the thaw and spreads upon the ice and adds to its load of filth.

From the river Albany daily draws 6,064,000 gallons of water, which is largely returned to the stream as sewage, and as the daily flow of the Hudson is 6,677,000,000 gallons, we find that the water there consists of about 1,100 parts of dirty water from Troy and one part of Albany sewage. And the dirty water from Troy does not improve before it is joined by the Albany contingent. Further down the river are the towns of Hudson, with 8,000 inhabitants; Catskill, with over 4,000; Kingston, with more than 18,000, Castleton and numerous others, all adding to the contamination directly where the great mass of ice is gathered.

It was, however, from one of the Albany houses that the ice was taken which was found to contain 50,000 living, energetic, business-like bacteria in one-third of a teaspoonful of melted ice. Beautiful and transparent it was, too. There are 30,000 tons and over gathered right opposite where two very large sewers flow into the river. I saw the horses which drew the markers go almost into the mouth of the sewers in laying out the squares for cutting, and I resolved to drink no ice water next summer.

The larger ice houses lie below the city, and the further away they are the more the owners condemn the practice of gathering ice in the immediate vicinity of Albany, yet it is safe to assume that they readily resort to that supply if available when their own is exhausted. A glance at the estimate of the amount cut shows that two-thirds of the whole crop is cut within thirty miles of the city and one-fourth within twelve miles, and I should judge that at least one-tenth, a very moderate estimate indeed, is cut between Troy and Albany.

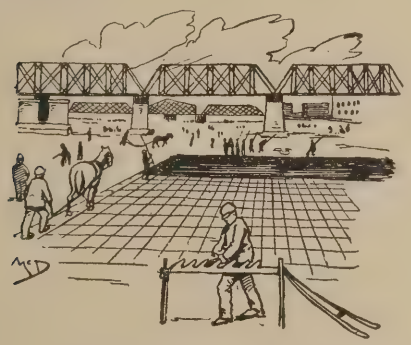


AN ICE HOUSE OPPOSITE ALBANY.

While Pruden admits that many species of the bacteria found in this ice in such numberless quantities may be innocuous, it does not need a very excitable temperament to feel qualms at the thought of drinking them. The mere fact that typhoid germs lurk in the water, although Pruden has not succeeded as yet in capturing therein a single specimen, is certain, from the numerous cases of the disease in Albany during the past season; and when we find that the sewage borne on a sluggish current is met daily and backed up into the shallows and behind the islands by the incoming tide, we can readily believe that a considerable source of danger may be present in the ice gathered anywhere near the city. Also, after the river is frozen over much of the sewage and drainage from the towns on the hilly shores flows out over the ice and forms fresh layers which do not even have the advantage of dilution with the larger body of dirty water. It freezes as simple sewage, and even frozen sewage cannot be considered either delectable or harmless. Yet I met a great many people who have been using this ice for years, as their forefathers had done, receiving no injury. The people in Albany largely laid the numerous cases of typhoid fever to the use of impure water, although several physicians assured me that it was caused by imperfect drainage. I found, too, that many of the Senators and Assemblymen were constantly engaged in a scientific investigation of the amount of alcoholic material necessary to kill the dreaded bacteria in a very moderate amount of water, no two agreeing exactly upon the question.

A glance at the names of some of the bacteria is sufficient to cause a chill in the heart of the most hardened ice consumers. When we find that we have drunk a million of *staphylococcus pyogenes* we are apt to feel a long shudder steal over our frames; but as I'm not writing this in the interest of any particular brand of wine or liquor, I will state that there does not seem to be much danger in drinking this sample of bacteria as far as is at present known. Nor do I wish to "bear" the ice market in the interest of ice making machines, as I have been charged; but it seems to me, as an impartial and uninterested observer, that the rights of those people who do use either water or ice should be protected by the State.

The State Board of Health should in some manner control the fields, and decide at what distance from sewer pollution the ice should be gathered, compelling the use of bad ice for cooling purposes only. The remedy or palliation of the evil at present would seem to consist in only using this ice by application to the outer surface of vessels containing beverages. As a great deal of opprobrium at present attaches to the Hudson River ice, it behooves the large companies to exert an influence in the matter of State supervision, else their customers will become so suspicious that they will use no brand of ice whatever except the artificially manufactured.



AS FAR AS THE EYE CAN REACH.

A glance at the ice fields is extremely interesting. I drove down the river for many miles as the cutting was just beginning. The stream at intervals was dotted with crowds of men and horses busy in marking out the great square, like a gigantic chess-board, upon which they might be taken as representing the pawns and pieces. Large open spaces of blue water already appeared, showing how rapidly the work is done.

The "marking" is done by a saw-like implement, with several huge sharp teeth, drawn by a horse and guided by a man, who holds it like a plough. It marked a series of long, deep scratches at intervals of about three feet, crossing them with other lines until an immense space is marked out. He is followed by men



MARKING OUT THE SQUARES.

with long-handled saws, who proceed to divide the ice into blocks with the reposeful motion and languor of men who work by the day. Then comes an army of men with long pole-hooks who deftly yank the cakes out upon the firm ice, and then they are piled upon the carts if at a distance from the houses. Arriving at the huge buildings, they are hoisted, one by one, up an inclined plane, along which runs an endless chain-bell to the top of the building, and then lowered into its vast recesses, making a foundation solid and firm of opulence for its fortunate owner.

The scene is a busy one, not lacking in picturesque features, yet when the thermometer moved about zero I did not linger long to make sketches. For days the men have been clearing off the snow, which prevents freezing, and scraping the ice. I was somewhat surprised at the amount of work done in scraping off rough spots, as I had imagined they merely had to cut it when thick enough. The value of the ice is greatly increased by freedom from white spots or bubbles, and large holes are frequently made to allow the air to escape from beneath the ice. It ranges from ten to twelve inches at present, and teams are driven over its surface in safety. Behind the dykes the ice is a couple of inches thicker than in the channel, and it varies surprisingly at different points, there being a variation of four inches in places.

The prospect for good clear ice was never better—so the icemen say. Many of the cutters have made long contracts, one man having agreed to deliver ice at 85 cents a ton for the next seven years. Looking at the throng casually, I should imagine that the man who had a good ice-house and a coal-yard in operation for a few years need never have to drive the proverbial wolf from his door for the rest of his life.

WALT. MCDOUGALL.

WINES.

THEIR CHARACTERISTICS AND THEIR ADULTERATIONS.

BY FRANCIS WYATT, PH. D.

(*Continued from page* 30.)

Although the precise period at which the grape vine —*Vitis Vinifera*—was first known to mortals, is lost in the night of time, it must have certainly been antidiluvian, since we are told in the first books of Moses not only that Noah proceeded to plant it immediately after leaving the ark, but that he manufactured wine from the juice of the fruit, and cursed his son Shem in a fit of drunkenness, brought on by its abuse. Nor is there any more certainty as to the country in which it originated, for it is still found in all the luxurious magnificence of unadulterated or untrammelled nature in Syria; along the borders of the Caspian sea, and throughout China, northern Persia and Cashmere. There is no record of its introduction into Greece, yet it is evident that it must have been well known and extensively cultivated there long before the time of Homer; and we learn from the *De Re Rustica*, of Columella, that even in Italy, where in modern times it has been so flourishing, the Romans experienced the greatest difficulty in its propagation. It is said to have been taken to France by Probus, and if we may attach any credence to tradition, the very best vintages of that country, even now, are obtained from spots which were originally selected by Italian cultivators. Such, for instance, is the Romanée Conti, of Burgundy. The most peculiar characteristic of the vine, however, is the fact that a *temperate climate* is essential to the maturity of its fruit; it cannot bear a long continued tropical heat; and is immediately killed by an intense cold. This is made apparent by its actual state of culture, which extends in the Old World from 53° north latitude to the equator, and as far south as 40°; and can be carried to success on our own continent at a maximum of 37° north latitude on the Ohio, and 38° on the northwest coast to San Francisco. To the question of altitude, it would appear to be indifferent, for while in Middle Germany, for instance, we do not find it growing higher than some 1,500 feet; in the Alps it reaches 2,000 feet; in the Appenines 5,000 feet, and in the Himalayas, even 10,000 feet above the level of the sea.

The researches to which so many eminent scientists have devoted their labors for the past fifty years, have resulted in the unanimous opinion that its prosperity depends, not so much upon any specific degree of temperature to which it may be subjected, at any stated season, but upon the long duration of a genial summer heat, during four or five months of the year. Thus, for instance, to choose a ready and familiar example, although a careful comparison of the mean yearly temperature between Moscow, in Russia, and Bordeaux, in France, has shown that the very slight difference is really in favor of the former, all efforts to ripen the grape in the open air of that city have been entirely unsuccessful. At the first glance this circumstance may probably strike us as somewhat anomalous; but upon a more attentive examination we perceive that it is perfectly in accord with the general plan of nature; for while it is true that the maximum heat of June and July is greater in Moscow than in Bordeaux, it is equally true that the temperature gradually decreases in August and becomes quite cold in September, so that while the plant is afforded every opportunity of developing itself during the first half of the period, it invariably comes to grief in the second half, at the very moment when the action of the sun is most necessary. Another deleterious climatic influence to which it is extremely susceptible is that of moisture—as, to choose another example, we may readily find on reference to Great Britain, as compared with her near neighbors, France and Germany. In England the climate is a moderate one, yet the grape is seldom, if ever, known to ripen in the open air, while in France it may be met with in more or less perfection as far as 49° north latitude on the western borders of the Seine, and in Germany its cultivation extends on the Rhine, in the greatest profusion, down to Cologne, and is even found, although somewhat poor and unhealthy, in the environs of Berlin, at 53° north latitude. The vine thrives best upon exposed hills with a southeast aspect, and in a light, volcanic and calcareous soil, the quality and character of which is now definitely recognized as the all-important factor in its growth and fecundity. It has, in effect, over and over again been demonstrated; we ourselves have frequently seen, not only in this but in other countries, that while the wine produced from the grapes grown in some particular spot will be of the most delicious quality and delicate flavor, that derived from plants of the same nature and origin, growing within only a few yards of this inexplicable boundary, is devoid of any of those virtues which render good wine so dear to the heart of a true connoisseur. We shall not attempt a lengthy discussion of this phenomenon, for no truly scientific reason for it has yet been assigned, but we may nevertheless mention that we have devoted a great deal of our leisure time to its study, in the laboratory and in the field, and have made innumerable analyses of different soils where grapes of the most varying descriptions have been grown. So far as these investigations have gone, we are bound to confess that their results have thrown no light upon, or afforded no solution to, the mystery. The very utmost point to which we could possibly strain our conclusions would be to assert: First, that there is no other plant of similar importance to mankind which makes such little demand upon the fertilizing agents of the soil, and which, as a consequence, when it is properly and carefully cultivated, necessitates such small expense to the farmer for artificial reconstitution; and second, that despite the seeming contradiction, the abundance of the crops is in the direct proportion to the richness of the soil in phosphoric acid and potash. Thus, in the south of France we have known districts where, before the invasion of the vines by the phylloxera, the crop has been equal to 1,200 gallons per acre, without the employment of any kind of fertilizers. In the same way we have seen plants of other regions, in both France and Italy, where we were assured that fertilizers were being constantly used, and where 300 to 400 gallons was considered an excellent return. Like all other plants, the vine depends for its sustenance upon the mineral elements of the soil and the organic elements of the air, absorbing the former through its roots, and the latter by its leaves,

and although even to-day our knowledge of these inner processes are merely elementary, we can readily conceive that in the course of time the particular kind of mineral, exactly suited to the development of each species, will, from the effect of being constantly taken away, eventually become exhausted. Thus, in a virgin soil, there will naturally be a far greater reserve of the necessary food than can be expected in a soil which has been under cultivation for centuries, and hence, since in all other particulars of climate and situation we have been so singularly favored, there can be little doubt that, as we have already said, the best wines of the future will be grown upon this continent, and the culture of the vine will be one of our greatest industries. It is in consequence of these facts that it particularly behooves us to take time by the forelock—to look around us and note what has happened to our neighbors—to carefully avoid their errors and to profit by their experience. If we glance at France, we see that only a very few years ago one-twentieth of her entire cultivated surface was occupied by the vine, the sale of its products being annually estimated to realize no less a sum than *four hundred million dollars!* To-day very little of this wonderful source of riches and prosperity remains; the old and weakened plants have fallen an easy prey to the ravages of that extraordinarily destructive insect, the phylloxera, and the glorious vintages which have furnished motives for so much poetry and song; which have been sources of inspiration to so much wit and genius in every branch of art, have disappeared forever. The wine grower has given place to the wine compounder; the natural products of Bordeaux and the Midi exist only in the memory of those who were fortunate enough to drink them in their prime; and have been succeeded by the perfumed mixtures of Italo-Spanish *coupages* and of *raisins secs* so cunningly contrived by the chemists of Cette. Should not this bitter lesson, this terrible visitation, be made of profit to us, and may we not be pardoned, if, carried away somewhat by the strength of our feelings, we have branched out of the path we had laid down for ourselves, to utter a few words of warning? May we not insist upon the fallacy of allowing the vine to continually exhaust the soil and bring about its own decay? May we not urge upon all who are interested to obviate this calamity by making judicious use of chemical analysis; by finding out what are the elements of their soils—which of those elements and what proportions of them the vine yearly takes away. Finally, may we not venture to affirm that if in its juice and in its leaves and stems, there are found large quantities of cream of tartar and phosphoric acid, an equivalent to these quantities in the form of potash and phosphate of lime, so easily and so cheaply procured, should, without waiting for signs of poverty or exhaustion, be returned to the soil after each crop? Proceeding now to consider the grape itself, and bearing in mind its luscious flavor and its agreeable combination of sweetness and acidity, we have no hesitation either in qualifying it as a highly estimable and useful article of food, or in stating our opinion that under proper arrangements, and in the absence of chemical antiseptics, the general use of the fresh, unfermented expressed juice, as a beverage, would be conducive to health and productive of very excellent results. The average composition of this juice may be said to consist of sugar, gum, fat, resin, albumen, gluten, tartaric acid, cream of tartar, malic acid, malate of lime, iron, manganese, phosphoric acid, chloride of sodium and water. And we may here make an explanation, to which we solicit the most earnest attention, which is of the utmost importance, and which, if we succeed in conveying it correctly, will show why grape juice, *rather than that of any other fruit*, is particularly adapted for making wine. In the juice of all fresh fruits there is constantly to be found by analysis, a considerable quantity of some characteristic organic acid. In the apple and the pear, for example, it is chiefly malic acid; in the orange and the lemon, citric acid; in the grape, tartaric acid. As all these fruit juices contain a large quantity of sugar, and are consequently susceptible of undergoing fermentation, attempts have frequently been made—some of them, it must be allowed, very successful—to turn them into wine. Now, it must be observed that their acids do not exist in a pure—or more correctly—a free state, but are all of them in combination with some of the alkaline substances, such as lime, potash, magnesia, or soda, which the plant has derived from the soil, and with which they have formed *acid salts*—that is to say, compounds in which the acid principle predominates, and which have a distinctly sour taste in the mouth. With but a single exception, the whole of these acid salts thus formed in the fruit and existing in the juice, are soluble in water. The *juice of the grape forms this exception*, owing to the fact that in its case, the tartaric acid has combined in the proportion of two parts of acid to one part of potash, to form the insoluble tartar, or bitartarate of potash we have already alluded to, and which is always deposited by the wine, either in the barrels or bottles in which it may be kept. Hence, genuine wine is freed by a natural process, from that acidity which is inherent to the juice of all other fruits, and it is to the endeavors made to conceal this acidity by the addition of sugar, that artificial wines owe their most objectionable qualities.

(To be continued.)

CANDY-MAKING HYPOCRITES.

A TRICK OF THE TRADE WHICH THE PUBLIC SHOULD KNOW.

"Hypocrisy prevails in every trade but our own" is a sentiment too often expressed of late by the great confectioners of the United States. They are so elated by the growth and prosperity of their industry that they apparently overlook its many sins of omission and commission. Taken as a body the American candy-makers deserve much credit. The vile compounds which were so common twenty years ago are almost unknown to-day. Purer materials, better processes, new inventions and higher skill and workmanship abound everywhere, and are seen in the plebeian lozenge as well as in the most costly bon-bon. For this change for the better, and, above all, this praiseworthy development, they merit high commendation. They get it also. Not only the general public praises them, but they themselves and their own journals indulge in a large amount of self gratulation and wholesale flattery. In this respect they have unknowingly blown a very beautiful soap-bubble, but still a soap-bubble which is liable to be pricked by someone who knows. Their greatest danger lies in the hypocrisy of a number or their great dealers. Two in question are popular chocolate manufacturers. They can and do produce some of the finest and purest goods in the market. These are retailed in palatial shops at very high figures, and are naturally held up to popular admiration and esteem. The physician and chemist analyze them and pronounce them pure and superior in every regard, and the recommendation is published in every paper and read by every person in the land. Upon this popularity they do a wholesale business alongside of which their retail trade is the veriest bagatelle. But, and here lies the joke, the wholesale goods are *not* the same as those which are retailed, are *not* these which have been analyzed and commended, and are *not* what the public fancies it buys when it purchases. On the contrary, these wholesale goods are worthless and unwholesome stuff. Where they are supposed to be pure chocolate and white sugar they are mixtures of chocolate, starch, sugar, glucose, flavoring and Venetian red. John Smith selling such vile composition would become a bankrupt in no time if he were not prosecuted for fraud and adulteration, but when made and sold by a concern famous for the purity and excellence of its output, no suspicion is excited, and the hypocritical manufacturer realizes a golden revenue. To so large an extent is the evil practiced that it is an everyday matter to buy at retail in country stores goods made by distinguished houses for less than the wholesale price of the wares they sell to the great Broadway tradesmen. The fraud and imposition work wrong in more ways than one. They injure the health of the consumer; they also drive out of business small but honest concerns who put up pure goods. The tendency, therefore, is to lower the quality and finish of confectionery, to foster the use of imitants and adulterants and to give the well-known houses a monopoly of the business. It is high time that a stop was put to the nefarious traffic. A second imposition and humbug is the vociferous shout by the confectioners that they use no adulterants, but, on the contrary, punish the adulterator, and then the confidential whisper that adulterants are only these substances which in normal quantity injure human health. Under this exquisitely ingenious arrangement they replace sugar and fine gum with glucose, vanilla with tonka and vanilline, almonds with myrbane oil, butter with oleomargarine, rose with geranium, and fruit flavors with compound ethers. They "dilute" cocoanut with starch, sugar and terra alba, and use homeopathic, and therefore harmless quantities of dyes and colors which in ordinary amounts are injurious, if not destructive, to the stomach. Of course they do but little harm by most of these practices. Glucose, tonka, oleomargarine, compound-ethers and saccharated cocoanut are, if in good condition, beneficent rather than otherwise. But it is none the less imposition, humbug and fraud. Let the confectioners adopt the English statute and stamp on every package all the ingredients their goods contain. If this were done to-day there would be the greatest commotion and the wildest excitement their pleasant industry has ever known.

PAMPHLETS AND PERIODICALS RECEIVED.

THE NATIONAL DRUGGIST.—We learn with pleasure that the editorial management and control of the *National Druggist* has been placed in the hands of Dr. Frank L. James, of St. Louis. Dr. James is an experienced and expert wielder of the editorial pen, a scientist of distinguished reputation, one of the leading microscopists of America, and withal a genial gentleman. His previous relationship with the *National Druggist* was in the more restricted capacity of departmental management, but the value of his services was a recognizable quantity in the prosperity of the journal, which will be more conspicuously manifest now that he is invested with the whole control.

A HANDY CALENDAR.—We have received from the publisher, E. B. Treat, of 771 Broadway, the "Don't Forget It Calendar" for 1888, embodying separate pages for each month with a daily tablet for memoranda of passing and future events. It is both a handy and a useful companion.

THE COLUMBIA CALENDAR.—A novel business calendar for 1888 is the Columbia Bicycle Calendar and Stand, just issued by the Pope Mfg. Co., of Boston, Mass. In this calendar a new departure has been made, decidedly unique and different from any previous attempt in calendar construction. The calendar proper is in the form of a pad, containing 366 leaves, one for each day in the year, to be torn off daily. A portion of each leaf is left blank for memoranda, so arranged that the memorandum blank for any coming day can be turned to immediately at any time. The pad rests upon a portable stand, and when placed upon the desk or writing table the entire surface of the date leaf is brought directly, and left constantly, before the eye, furnishing date and memoranda, impossible to be overlooked.

AN EQUIVALENT.—The amount of force exerted by heat and cold in expansion and contraction of metals is equal to that which would be required to stretch or compress it to the same extent by mechanical means

APPETITE.

SOME REFLECTIONS RESPECTING ITS GRATIFICATION.

"Poor child, Heaven has denied you the blessing of an appetite," was the pitying exclamation of a royal *gourmet*, when a little girl declined some delicacy pressed upon her in his presence. To be devoid of the sense of taste must certainly be a sensible deprivation, even to the least gluttonous of mankind. Philosophical Miss Martineau, who was thus afflicted, remembered and spoke of the gratification which she experienced at being able once, through some accident, "to taste roast mutton," adding that for once in her life she "looked forward to dinner. But, alas! the gift (of the power of tasting) was withdrawn as suddenly as it had been granted." Appetite varies with different individuals as much as any other quality. There have been persons with abnormal powers of consuming food, as well as persons capable of living upon a handful of dates. Louis XIV. belonged to the former class; and the appetite of his unfortunate successor, Louis XVI., never failed through the darkest hours of his life. As Victor Hugo has remarked in one of his novels, it is unlucky when individuals thus constituted come to be maintained by public institutions, as prisons or hospitals, for they suffer the pangs of actual starvation upon the regulation allowance of provisions.

Possessors of large appetites are frequently proud of their powers of consuming food. A writer on rural life has given a description of what may be termed "tournaments of gluttons," common in country places some fifty or sixty years ago, in which the competitors ate against each other, and the largest gorger won the day. At one of these feasts the winner is said to have consumed an entire calf. Similar eating matches were held in secret in past times, the competitors being young women who devoured cherries in emulation. Twenty pounds of this fruit are said to have been eaten at one sitting by the winner at one of these encounters; but the girl did not long survive her victory. Englishmen appear to have had an undesirable reputation for gluttony in past ages. Foreign neighbors, especially the Scotch and the French, scoffed at the "greediness" of their English opponents, while the English retorted by sarcasm on the "meal fed" Scotch and "skinny Frenchmen." "They make good cheer in England," is the repeated observation of a French traveler who visited these shores during the middle of the sixteenth century, and the amount of meat required by, and supplied to, the English soldiery is commented on by Froissart, De Comines and other writers of the fourteenth and fifteenth centuries. The list of "daily provisions," as supplied to private households and convents in the Middle Ages, certainly indicates that our ancestors were not deprived of "the blessing of an appetite." Even on fast days the allowance of food was not insignificant, and the persecuting zeal which imprisoned and burnt religious opponents did not always "restrict the diet" even of condemned prisoners. The "daily allowance" made for the food of the Marian martyrs, Ridley and Latimer, was on no ungenerous scale.

During the last century the fashion for denying the existence of an appetite, at least in the case of ladies, set in. Queen Elizabeth's maids of honor were not ashamed of enjoying their beefsteak breakfasts; but the beauty of the eighteenth century was supposed to ignore the vulgar necessity of eating. It was bad taste for a lady to do more than nibble at dainty morsels in public. Unfortunate damsels who possessed a healthy appetite were obliged to satisfy its cravings in private. More license was allowed to the male sex. Indeed, the eighteenth century may be said to be remarkable for the number of celebrated gluttons or epicures which it produced. Cookery was elevated into a fine art, which royalty itself did not disdain to practice. Quality, not quantity, was considered in providing for a feast, and the culinary artist rose to importance. To be indifferent to the description of food served up was to wound this personage in his tenderest feelings. The Duke of Wellington lost the services of a good *chef* for no other reason than that he was careless regarding the quality of his meals. "I cannot stay with him," said the wounded artist. "I cook him a dinner fit for the king; he say nothing! I go out, and leave the dinner to ze stupid cookmaid; again he say nothing." A more pointed rebuke was administered to the duke by the celebrated epicure, Cambacéres, who invited him to a banquet, and, piqued at his not praising the excellence of the cuisine, asked his opinion of some particular dish. "It is very good," was the reply, "but, to tell the truth, I hardly know what I eat." "Not know what you eat," cried the disgusted epicure, "then why did you come to dine with me?"

Besides the indifferent and the abnormal, some persons possess what may be called a diseased appetite. Tastes differ widely regarding food. Many persons would not object to partake of the meal King James said he would provide "for the devil, if he asked him to dinner"—pork, and "a pipe for digestion." We would not dwell on cannibal banquets, nor on the peculiar method of the interment of a husband's ashes practiced by the Queen of Mausolus. The old "fire eaters," so common at country fairs a generation ago, professed to find a supporting diet in fuel and flames. Among the many attacks made upon Dr. Johnson after his acceptance of a pension from government was one purporting to be written by a famous "fire eater" at Bartholomew Fair. He complains that "real merit" is never acknowledged; that Dr. Johnson has been rewarded for "writing well," and Sheridan for "speaking well," but that he himself has received nothing for "eating well." This unappreciated genius declares that his favorite mess is "brimstone and fire," and that if he came into a kitchen where a sirloin was roasting he would "eat up the fire and leave the beef." This taste was even stranger than that of the "stone eater" mentioned by a French writer in 1760. This man was exhibited at Avignon. His keepers professed to have discovered him on a desert island, where he was subsisting wholly upon "large flints, and such marbles and stones as he could make into a paste, which was to him a most supporting and wholesome food." When brought to France he was induced to eat sparingly of raw meat, but refused bread and vegetables. Possessors of appetites like these might at least rely on being able to feed themselves cheaply.

DOMESTIC DIETETICS.

SEASONABLE FOOD.

February.

MEATS.—Beef, tongue, mutton, pork, venison, ham, kidneys, liver, sausage.

GAME AND POULTRY.—Grouse, hare, pigeon, chicken, duck, goose, turkey.

FISH. — Anchovy, bass, carp, catfish, eel, flounder, halibut, herring, lobster, mackerel, oysters, rock bass, rock fish, salmon, smelt, whitefish.

VEGETABLES. — Artichokes, carrots, celery, onions, parsley, parsnips, potatoes, turnips.

FRUITS.—Apples, oranges, bananas.

PRACTICAL RECIPES.

SAGO SOUP.—Take three pounds of lean beef, a slice of lean ham, and lay them in a stewpan with a lump of butter, draw the gravy gently, add two quarts of water and a sliced onion which has been browned by frying in fresh butter; also add a bunch of sweet herbs, six cloves, a blade of mace, a teaspoonful of allspice, and one of black pepper whole; stew until the soup is rich and brown, then remove the meat, and strain the soup clear, put it into a clean stewpan, and thicken it to a good consistency with sago.

RAGOUT OF LIVER.—Heat three or four spoonfuls of nice drippings in a frying pan, add an onion, sliced, a tablespoonful of chopped parsley and thrice as much minced breakfast bacon; when all are hissing hot lay in the liver cut in pieces as long and wide as your middle finger, and fry brown, turning often; take out the liver and keep warm in a covered hot-water dish; strain the gravy, rinse out the frying pan and return to the fire with the gravy and one tablespoonful of butter worked up well in two of browned flour, thin gradually with half a cupful of boiling water and the juice of half a lemon, add a teaspoonful of minced pickle and a scant half teaspoonful of curry powder wet with cold water. Boil sharply, pour over the liver, put fresh boiling water in the pan under the dish, and let all stand closely covered for ten minutes before serving.

ENGLISH PAN-CAKES.—Take one cupful of cerealine flakes, one tablespoonful of sugar, one pint of milk, one pinch of salt, three-fourths of a cupful of flour, three eggs, one teaspoonful of baking powder; sift the flour, salt and baking powder together; add the eggs, well beaten, then the sugar and cerealine flakes; dilute with milk; mix into thin batter, and use a small, round frying pan; melt a little butter in it; pour about one-half cupful of batter in it; turn the pan so that the batter may cover the whole bottom of the pan; put on a hot fire; bake until brown on both sides; butter each, and roll them up separately; sprinkle with powdered sugar and serve.

A NICE BREAKFAST DISH.—Salt the whites of eggs while beating to a stiff froth, then spread on a platter; place the yolks at regular distances apart in cavities made in the beaten whites and bake till brown.

DROP FRIED CAKES.—One cup sugar, one tablespoonful of butter, one cupful sweet milk, three eggs, two teaspoonfuls Horsford's baking powder; stir as thick as cake, then drop into hot fat; flavor with extract of nutmeg or cinnamon.

RICE CREAM.—Put in a stew pan four ounces of ground rice, two ounces of sugar, a few drops of the essence of almonds, with two ounces of fresh butter; add a quart of milk. Boil for twenty minutes, till it forms a smooth substance, though not too thick; then pour in a mould previously oiled or washed out with cold water; serve when cold. It will turn out like jelly. A very nice dish is made by putting a layer of any preserve in a glass dish, and pouring some of this hot cream over. When cold the top may be ornamented with almonds blanched and split.

LEFT-OVER SWEET POTATOES.—Take boiled sweet potatoes, any left over from a previous meal are equally as good as fresh ones, peel and mash fine, spread on a pie plate and brown in a brisk oven. Or they may be sliced instead of mashed, and then browned; and another way is to lay them in the oven whole after removing the skins, and brown.

PEARL CAKE.—Whites of three eggs, one teacupful of white sugar, one teacupful of flour, one teacupful of corn flour, half a teacupful of butter, half a teacupful of milk, two spoonfuls of Horsford's baking powder, two teaspoonfuls of extract of lemon. Beat the butter to a cream, add the sugar and other ingredients, and lastly the eggs (whites only), well beaten. Bake at once in a moderate oven.

LEMON TRIFLE.—Take one large sponge cake (sliced), one quart of milk, three eggs (whites and yolks separate), five large tablespoonsfuls of pounded white sugar, two teaspoonfuls of extract of lemon, and one-quarter of the rind of a lemon, finely grated. Slice the cake and arrange it in a deep glass dish, then pour upon it a teacupful of hot milk to soak it. Beat the yolks of the eggs, and stir with them four tablespoonfuls of sugar; heat the rest of the milk, and pour it upon the eggs by degrees, stirring all the time; return it to the saucepan, and continue stirring until it thickens; let it cool a little, add the flavoring, and pour over the sponge cake. When perfectly cold, heap upon it a méringue made of the whites of the eggs, whipped to a stiff froth, sweetened with the other tablespoonful of sugar, and flavored with lemon and rind. The méringue should be made just before serving.

ENGLISH PLUM PUDDING.—Take one-half pound sugar and one-fourth pound butter. Stir it up to a light cream; then add six eggs—two every couple minutes until the six eggs are used, one-fourth pound suet, two ounces citron, two ounces raisins, two ounces currants, two ounces almonds; chop all up fine; then mix it into the cream; then add one-half teaspoonful allspice, one-half teaspoonful cloves, one-half teaspoonful lemon extract, three ounces cerealine flakes, three ounces flour; put in well greased moulds and steam for an hour. Serve with brandy sauce.

"Honor to whom **HONOR IS DUE.**" Try Crystal Blue and honor its manufacturer."

THE "BEST" TONIC.

While modern chemistry and especially physiologic science have only of late succeeded in demonstrating the assimilative virtue of the cereals in all their forms, the life sustaining power of malt extracts and liquors has been a familiar fact from time immemorial. The ales, porters, stouts, half-and-halfs and beers of Europe have from early years been used by nursing mothers, invalids and the aged, and have been proven by experience to possess food value, as well as stimulating property.

So in the great public institutions of Europe and America, tens of thousands of experiments have established the nutritive virtue of the soluble elements in partially fermented and malted amylaceous bodies.

The assimilative quality is easily explained and understood by modern chemistry. This branch of inductive science has, of late years, so increased our knowledge of food products and of physiology that we can almost see the journey of an atom of nutriment from its cradle in the barleycorn to its end in the blood vessels of the human organization.

It requires no effort of the imagination nor any profound acquaintanceship with analytic science to picture these changes or to explain their relations to each other and to the body. The facts which patient explorers have disclosed and made public are so simple that he "who runs may read."

To examine the journey, take a single barleycorn, split it into halves and examine it beneath the microscope. You see an outer covering or husk, an inner covering or skin, and a white interior, which is the seed proper. This consists of the germ and the food which nature provides for the subsistence of the coming plant during the first three weeks of its life.

It bears the same relation to the great law of life as the butterfly's egg which is deposited in soft bark or tender twigs, the celled-up honey stored around unborn bees, or the animal matter which ants provide for their young.

If you are an expert microscopist you can see divisions and lines along which growth is to come. Here is one small part which is to develop into the future stem; there another which will be the five roots; here is a delicate membrane which acts like a wall or curtain, or like the fine web which surrounds the yolk of an egg.

Other delicate lines and exquisite curved surfaces indicate the directions of future growth and to a certain extent the relation which the various parts of the coming plant are to bear one another.

In the laboratory the barley shows more complexity than under the microscope. The husk is largely ligneous tissue, hard, dry and indigestible. The skin is cellulose, starch and gluten combined. The interior is starch, gluten, albumen, sugar and gum. In all is phosphate of lime, salt and other minerals.

The chemical composition of a barleycorn is shown in the following table:

Water	10.5
Lignose and cellulose	10.2
Albuminoids	5.1
Insoluble starch	64.5
Sugar	3.9
Soluble starch, dextrine	4.2
Oil	.4
Mineral ingredients	1.2
	100.0

This analysis resembles closely those of the other great cereals, oats, wheat and rye. Farther off and of smaller value are the other foods of the same class, millet, buckwheat, corn and rice. These eight products are the staple foods of humanity. Of the fifteen hundred millions estimated to be upon the globe, at least twelve hundred million use one or more of them per diem. Of the octette named barley is by all odds the best adapted for malting and malt extracts. Whether due to the composition or some mechanical arrangement of its particles is unknown, but the fact remains that its resultant forms are better flavored, handsomer colored, more appetizing and nutritious than those of any other cereal.

If we used barley without milling or cooking, and ate the grain just analyzed, our gastric system would digest the albuminoids, sugar, dextrine, oil and a considerable part of the mineral ingredients with little difficulty or change. The starch would have to be acted upon by the fermenting principle of the saliva (ptyalin), as well as by the other digestive fluids, before absorption into the body. These change insoluble starch into soluble starch, dextrine and grape sugar. The lignose and cellulose would be passed through the system with more force and rapidity than comfort. We are not only cooking animals, but also milling animals. The raw barley is never used in the manner described, except by brute beasts and the men of whom Nebuchadnezzar was a typical representative. The barleycorn, when used for a food, is decorticated and polished. This removes nearly all the lignose and cellulose and leaves a mass of far greater digestibility and wholesomeness.

ANALYSIS OF PEARL BARLEY.

Water	11.1
Lignose and cellulose	.3
Albuminoids	8.4
Insoluble starch	70.0
Sugar	4.1
Soluble starch and dextrine	4.5
Oil	.7
Mineral matter	.9
	100.0

This decortication is not to be confounded with the grinding and bolting of wheat to produce fine flour. The latter process of course throws out the lignose and cellulose, but with these valueless elements eliminates a portion of the rich and beneficial albumenoids. These are the real staff of life, and give crushed wheat, wheaten grits, oatmeal, graham flour, and above all barley, their superiority over rice and corn. Were barley milled and bolted, in the usual style, there would result a fine flour similar to that of wheat. A beer from this would be pale and insipid, like that from rice or grape sugar. A malt extract would be scarcely more than a pale colored syrup; a tonic would be a sweetish, unnutritious and uninvigorating liquid.

If a morsel of ground pearl barley be introduced into the human system, or if a man masticate and swallow several barleycorns, the same actions and reactions occur as with the cereal in a natural condition, with the exception that now there is practically no woody fibre to irritate the alimentary canal or to interfere with digestion. In both cases the chief chemical action is the conversion of starch into soluble form by the saliva and pancreatic juice and its absorption.

A similar change is experienced by the barley-corn when it sprouts. The moment the germ begins to grow a principle comes into being we term diastase. It bears exactly the same relation to the seed that the saliva and pancreatic juice does to the human body, or the gizzard secretion does to poultry. It can be separated from grain as pytalin is obtained from saliva or pancreatin and ingluvine from the animal or fowl respectively. When separated and carefully dried, it retains this power of changing starch indefinitely. Added to starch preparations, such as maizena, cerealine, sago, tapioca, arrowroot, farina, cassava and corn-starch, it changes them rapidly from a stiff jelly to a clear syrup. Added to compounds of starch and albuminous substances, such as pease pudding and boiled beans, it liquefies the starch and leaves the albuminoids a finely divided coagulum. This sprouting is exactly the same thing as the growing of a human being. It progresses slowly. One particle of starch is dissolved by the diastase, and carried up or down by the sap and deposited, it may be in a leaf or it may be in the peticle of a root. In like manner the food in the stomach of a child is dissolved and carried up or down by the blood, one particle becoming a fibre of hair, and a second an atom of the toe nail.

The maltster merely utilizes these facts. He steeps large quantities of barley in water from forty to sixty hours, spreads them on floors for about a week until each grain has germinated, and then kills the germ life by drying in the open air or in kilns. The change undergone by the barley in these operations closely resembles what occurs in digestion, and is well shown by these analyses:

BARLEY MALT.

	Air-dried.	Kiln-dried pale.	Kiln-dried amber.
Lignose and cellulose	14.5	11.4	12.2
Albuminoids	13.2	11.1	11.3
Insoluble starch	57.9	56.7	50.8
Sugar	.5	.8	1.0
Soluble starch and dextrine	8.4	7.5	9.8
Oil	2.3	2.4	2.7
Mineral matter	3.2	2.9	3.1
Torrefaction products		7.2	10.1
	100.0	100.0	100.0

In comparing these tables with that of the plain barleycorn, it will be seen that the water has been driven out, the insoluble starch diminished, and the other organic ingredients greatly increased In addition, torrefaction products, of which caramel is a good example now exist in considerable quantity and make the malt more palatable, wholesome and digestible. The table does not show, however, the presence of the diastase present in the malt. This is made manifest by boiling equal amounts of barley and of malt, and by therefrom estimating the moisture, soluble and insoluble parts of each.

	Water.	Soluble Extract.	Insoluble Matter.
Barley	10.5	10.1	79.4
Malt	6.5	66.2	27.3
Differences	4.0	56.1	52.1

These differences have a physiologic as well as a chemical meaning. They show that the malting has done, to a very large extent, what is effected by the digestive processes of the body. In other words, the malt when delivered by the maltster is, in dried form, the complex liquid which the saliva and pancreatic juice made out of the pearled barley which went through the stages of boiling and eating.

It is obvious, therefore, that if the soluble extract of malt were introduced in liquid form into the stomach, it would be immediately absorbed and digested, and the alimentive functions spared or saved the time and labor of assimilation. In this regard, malt extract bears the same relations to the cereals that Liebig's extract does to a porterhouse steak. The malt extract is, consequently, a food substance of the highest value. It possesses even greater value as a food accessory. The experiments of Williams, Lassing and the Smithsonian Institute show that it increases the digestibility of all cereal foods. Williams, in a late and valuable monograph on the subject, says:

"I find that oatmeal porridge, when thus treated with malt or malt extract, is thinned by the conversion of the bulk of its insoluble starch into soluble dextrine; that boiled rice is similarly thinned; that a stiff jelly of arrowroot is at once rendered watery, and its conversion into dextrine is demonstrated by its altered action on a solution of iodine. Instead of instantly striking a blue black color on admixture, only a slight brownish tinge is displayed, and not even this when the temperature has been carefully maintained.

"Sago and tapioca are similarly changed, but not so completely as arrowroot. This is evidently because they contain a little nitrogenous matter and cellulose, which,

when stirred, give a milkiness to the otherwise clear and limpid solution of dextrine. Pease pudding, when thus treated, behaves very instructively. Instead of remaining as a fairly uniform paste, it partially separates into paste and clear liquid, the paste being the cellulose and vegetable casein; the liquid, a solution of the dextrine or converted starch. Turnips, carrots, potatoes, etc., behave similarly, the general results showing that, so far as the starch is concerned, there is no practical difficulty in obtaining a practically sufficient amount of conversion of the starch into dextrine by means of a very small quantity of maltose.

"Hasty pudding," made of boiled flour, is similarly altered; generally speaking, the degree of visible alterations is proportionate to the amount of starch, but the smaller the proportion and the greater that of cellulose the more slowly the change occurs.

I have made a malt porridge by using ground malt, from which I sifted out as much husk as possible, instead of oatmeal. I found it rather too sweet; but, on mixing about one part of malt flour with four or more of oatmeal, an excellent and easily digestible porridge was obtained, and one which I strongly recommend as a most valuable food for strong people and invalids, children and adults.

A pure malt extract is practically a scientific bread that is almost digested; its solution is a liquid bread that has almost been changed into blood. It is these qualities which give the fermented liquors all their assimilative value. From the malt the intelligent brewer makes his ale and beer by further converting starch to sugar and sugar to alcohol. He leaves, however, more or less of wholesome carbo-hydrates and albuminoids in his brewing.

Without any alcohol, the liquid is a simple malt extract, that is, a superb food and a health-giving fluid of the best type. With the proper amount of the natural alcohol of fermention, it is a tonic and medicine as well. Thus, for example, in the "Best" Tonic, the alcoholimeter in five tests showed 5 per cent. of alcohol.

This makes it nutritious as well as stimulating. Other brewers who wish to make every possible penny out of their malt, convert all the carbo-hydrates they can into alcohol. Such beers are stimulating but not nutritious. These are instanced by an English small beer and a cheap lager.

	Alcohol.	Extractive Matter.
English small beer	3.2	2.4
Cheap lager beer	2.8	2.8

Such an article deserves no praise and is admissible only as a cooling summer drink or a refreshing one whenever a person is extremely thirsty.

It has only lately occurred to physicians that these principles and discoveries could be utilized for therapeutic and physiologic purposes. As soon as used it was found that the malt preparations were remarkably efficient. They are good not only alone but as the bases of compound remedies. They are used in such different substances as "malto-pepsin," "coca wine and malt," "lactated food," "malto-phosphites," and the like.

All of those contained more or less malt extract as a basis with remedial agents of different kinds. Thus combined, better effects were obtained than by the medicines alone and an assimilation produced of great and otherwise unattainable advantage.

The trouble with all malt extracts has been that if they contained too little alcohol, they were apt to spoil or turn sour, to have a molasses-like or mouldy taste and an unpleasant odor; and if they contained too much alcohol they were poorly adapted for invalids, infants and debilitated people.

Yet, despite these drawbacks, these malt extracts became popular and universally used. The problem was to make a pure extract of malt that should contain all the nutritive and soluble elements of the grain, be palatable, appetizing and aromatic, and on the other hand have enough alcohol to keep the liquid and to make it tonic and slightly stimulating.

This has been superbly accomplished by the Philip Best Brewing Company of Milwaukee, Wis., in what they have humorously and fitly termed the "Best" Tonic. It is a rich, aromatic liquid of a delicate red-brown color, slightly effervescent and a delicious flavor. The body is full, its elements warm, palatable and nutritive, and its after taste somewhat like that of the finest Burton. So thorough is its manufacture and admirable its composition that when permitted to stand it does not become flat and insipid, neither does it grow sour or cloudy. The amount of alcohol it contains is just enough to preserve the tonic and to give it the stimulative and medicinal value required by the physician and chemist. When used it accelerates and strengthens digestion, tones up the stomach, liver and kidneys and invigorates the general system.

The extractive matter is large and consists of three-elevenths of flesh forming and eight-elevenths heat forming elements, this being almost the proportion laid down by Prof. Voit of Munich, Prof. Atwater of Boston and Dr. Chandler of New York as that of an ideal food, and also being that of typical human milk. When introduced into the stomach, these elements are immediately absorbed and make healthy blood in a few minutes, doing the same work as the finest and best prepared food, solid and liquid.

The "Best" Tonic excels all other foods in the respect that the mechanical and chemical labor of digestion has been already done and that nothing is left to the system but the simple absorption of the liquid by the filtering membranes we call the small intestines. This vital fact cannot be over-estimated and should never be overlooked. Women under the strain of young motherhood, children, invalids, dyspeptics, the aged and infirm are nourished and built up by the "Best" Tonic in a manner far speedier and far superior to anything else known. It is this fact which has earned it the wide popularity it now deservedly enjoys and has gained the approval and hearty recommendation of all the leading physicians and scientists of the land.

The following certificates and analyses are added here to enable the reader to judge how the "Best" Tonic acts practically.

THE SOCIETY OF THE NEW YORK HOSPITAL.

HOUSE OF RELIEF, 160 Chambers St., NEW YORK, *Dec.* 20, 1887.

PH. BEST BREWING CO.,
Milwaukee, Wis.

Gentlemen: Permit me to acknowledge the receipt of three cases of your "Best" Tonic.

We have given it a through trial and can truthfully say it has been a great help to us. In the cases under observation, it has stimulated the appetite, and undoubtedly caused a refreshing sleep.

We shall continue to use it, and can recommend it as *the* Best Tonic.

Sincerely yours,
LUTE L. von WEDEKIND, M. D.,
House Surgeon.

NEW YORK, *Dec.* 20, 1887.

PH. BEST BREWING CO.
Milwaukee, Wis.

Gentlemen: I must say I am more than pleased with the "Best" Tonic. In my practice it has taken the place of Ales, &c. It containing "Malt and Hops," and free from Alcohol, this Tonic has all the constituents necessary to build the anemic system, and more especially in convalescing cases from pneumonia and fevers of a low type. I am,

Yours &c.,
J. W. STILES, M. D.,
Oswego, N. Y.

CHICAGO, *Dec.* 6, 1887.

PH. BEST BREWING CO.,
Milwaukee, Wis.

Gentlemen:—I have had the pleasure of examining and testing the qualities of the "Best" Tonic, not only in my practice, but in my family. Am most highly pleased with its medicinal qualities, and cordially recommend it to those, who, by reason of nervous exhaustion, find it necessary to resort to tonics and extra nutrients. A wineglassful before each regular meal, increases the appetite and improves digestion; administered upon retiring at night, has the effect to produce most tranquil sleep.

Respectfully,
J. HARVEY BATES, M. D.

MILWAUKEE, WIS., *Oct.* 26, 1887.

PH. BEST BREWING CO.,
Milwaukee, Wis.

Dear Sirs: I thankfully received the two bottles of your Concentrated Liquid Extract of Malt and Hops, and am impressed with the value of this good and nutritive preparation. It is really a highly nutritive tonic and remedial agent in building up a weak constitution, strengthening the nervous system, and a valuable substitute for solid food, particularly if given after diseases, in cases of injuries of the body, and especially when the appetite is diminished. It will be difficult to find a better tonic than the "Best," and I cheerfully testify that it is of great value in the treatment of all kinds of weakness and diseases. I prefer it to any imported malt extract.

Very respectfully,
M. OHLEMANN, M. D.

MILWAUKEE, WIS., *Oct.*, 21, 1887.

PH. BEST BREWING CO.,
Milwaukee, Wis.

Dear Sirs: I take pleasure in stating that your "Best" Tonic is the most palatable of any preparation of malt, and that from its prompt and reliable effect, I prescribe it in preference to that of any other make.

Yours truly,
J. R. McDILL.

MILWAUKEE, WIS., *Oct.*, 21, 1887.

PH. BEST BREWING CO.,
Milwaukee, Wis.

Gentlemen: I have used the "Best" Tonic in my own family and in my practice, ever since it was brought to my attention by the Philip Best Brewing Co., and am free to say that I believe it the most palatable and useful of the malt preparations I have used.

WILLIAM FOX, M. D.

MILWAUKEE, WIS., *Oct.*, 20, 1887.

PH. BEST BREWING CO.,
Milwaukee, Wis.

Gentlemen: I have used in my family and practice the Liquid Extract of Malt and Hops, known as the "Best" Tonic, with the most satisfactory results. I consider the malt extract the most valuable of all of its class of tonics, and especially adapted to those cases of debility arising from enfeebled digestion. The "Best" Tonic I believe fully equal to the best imported malt extract, and I am confident will give satisfaction to patient and physician.

J. H. THOMPSON, M. D.

ANALYSES.

WASHINGTON, D. C., *October* 27, 1887.

Dear Sir: The following are the results of my analysis of a preparation called the "Best" Tonic, received Sept. 20, 1887:

	Per cent.
Specific gravity, at 60° F.	1.024
Total solids, at 212° F.	8.490
Ash	.239
Alcohol, by weight	4.490
Lactic and succinic acids	.131
Acetic acid	.057
Dextrine	3.440
Maltose	3.101
Hop resin, etc.	.916
Albuminoids	.636
Glycerine	.260

Yours truly,
E. T. FRISTOE, *Prof. Chem.*,
Columbian University.

The certificate of analysis by Prof. E. G. Love, of New York City, seems to give unquestionable evidence of its therapeutic value, and it only remains for this new remedy to endure the crucial test of clinical experimentation, to take its place among the many really valuable proprietary remedies now so extensively prescribed by the profession.

The following is the analysis referred to:

	Per cent.
Specific gravity, at 60° F.	1.0262
Total solid matter	8.510
Alcohol, by weight	4.714
Maltose	2.983
Dextrine	3.543
Nitrogen	0.097
Equivalent to—	
Albuminoids	0.618
Glycerine	0.215
Hop ext., coloring matter, etc.	0.930
Acetic acid	0.057
Lactic and succinic acids	0.116
Ash	0.225

E. G. Love, Ph. D.
—*From the Medical Bulletin.*

MORE CERFITICATES.

Washington, D. C., *December* 28, 1887.

Ph. Best Brewing Co.

Gentlemen: I do not hesitate to state that my experience in using your tonic has proved to me its superior value.

Very sincerely,
C. Y. Kennedy, D. D. S.,
1426 New York Ave.

West Washington, D. C., *Dec.* 28, 1887.

Specialty Department,
Ph. Best Brewing Co.,
28 College Place, New York.

Gentlemen: Have been using your tonic for dyspepsia and find it doing me good.

Mrs. Kasson.

1013 E. Clay Street,
Richmond, Va., *Jan.* 17, 1888.

Ph. Best Brewing Co.,
Eastern Depot, 28 College Place,
New York.

Gentlemen: I have been using your "Best" Tonic for some time. I find it a most splendid article. You will see from the enclosed "coupons" how much I have enjoyed the tonic. My health is much improved, and I will take pleasure in recommending it to my friends.

I would thank you to send me the portrait of Mrs. Cleveland, which I will much appreciate, and keep as a memento of the good I have derived from your "Best" Tonic.

Respectfully,
Miss Minnie Kidwell.

New York, *January* 17, 1888.

Ph. Best Brewing Co.

Gentlemen: Your "Tonic" is one of the best "nervines" I have ever used, and has worked like a miracle with some of my patients, in cases of insomnia especially.

I thank you for the sample bottles, and can assure you of its value in my own case.

I have never used anything which has shown better results as a *nerve* and *blood* tonic. I advise its use frequently, and have ordered my druggist to have it on hand.

Very truly,
Julia H. Lombard, M. D.

(*From the American Drug Clerks' Journal, Chicago, Ills.*)

The *American Drug Clerks' Journal* acknowledges the receipt of a case of the "Best" Tonic. The "Best" is manufactured from the best malt and choicest hops, and although it has been in the market but a short time seems to be already in quite a lively demand. While two rival eastern houses have resorted to the courts to settle the question, "which is genuine," we would suggest to the trade the wisdom of recommending their customers to buy the "Best." Some philosopher has said that the best is always the cheapest. We are sure that the "Best" is just as cheap, and that no question has ever been raised in regard to it being "genuine." Always sell the one which is "Best" in more senses than one.

No. 44 West 49th St.,
New York, *January* 9, 1888.

Ph. Best Brewing Co.

Gentlemen: As a mild nutrient tonic, I find your preparation, designated The "Best" Tonic, fulfills many indications in cases of debility, that have come under my observation and professional treatment.

Yours truly,
Ed. C. Harwood, M. D.

1523 K Street, N. W.,
Washington, D. C., *Jan.* 24, 1888.

Ph. Best Brewing Co.,
Specialty Department,
28 College Place, N. Y.

Gentlemen: Sample of "Best" Tonic received. Gave to member of my family; was delighted with effects. Only trouble, there was not enough of it.

It seems to be a pure, excellent tonic, improving the appetite and digestion.

Would you furnish me with a dozen bottles as test?

S. J. Radcliffe, M. D.

THE VALUE A LIQUID MALT EXTRACT AS A FOOD MEDICINE.

BY WILLARD H. MORSE, M D., WESTFIELD, N. J.

(*From the Dietetic Gazette.*)

If we inquire as to the value of the fluid extracts of malt as food medicines, we may extend our researches in other directions than that of the laboratory and the domain of therapeutics. The story is that of a remote period, and the recognition is one which comes in the tones that are tremulous with the age of tradition. It is related in Chinese history that in one of the years of the reign of the Emperor Shen-Nung (about 2700 B. C.), that celestial worthy took to sow at the annual ceremony "a *lagi* of pearl barley," instead of the fourth of the five royal cereals, "because that he had learned to consider it goodly for medicine, in addition to being goodly for food, though given as a drink." There seems, however, to have been a revulsion of feeling, for less than a century later a succeeding emperor decreed that "barley come not to the royal plough." It is not one of the "five sorts" now sown, but for "three (five?) thousand years" (Bretschneider) it has occupied a place as a "*corsch'ng*" (medicine), as well as had honor as a food cereal. The Roman recognition came about five centuries before Christ, and in "commendation of the value of *hexastichon* (the six-rowed barley) as a strength-giving substance," a coin was struck at Metapontium, in Lucania. Strabo and Dioscorides allude to drinks made from barley, which Tacitus states were familiar to the German tribes as "tonics for valor and power." That this "tonic" was an aqueous solution rather than a "beer," appears from Landolt, who quotes the author of the "Periplus of the Erythrian Sea," as saying, "the drink is strange, of (deficient in) fermented saccharum, and * * * prostitutes not to the action of a beverage." Indeed, it is questionable if barley was not made available as of a medicinal aspect previous to being valued as a fermented liquor, although brewing (Blount) is "said to have been first performed to produce a drink intended rather as a bitter tonic than as a beverage." If I err not, Garnier states that beer as originally produced was intended as a wholesome tonic, and (Holinshed) "grew to be esteemed a beverage in proportion as it borrowed an alcoholic strength." It was recorded in the fourth year of Henry VI. (1425), that "by the adding to of an unwholesome weed called *an hopp* and by brimstone, thus *aile* is gotton of a new quality." In the same reign parliament was petitioned against "the wicked Hopp, which with Brewster Process dothe make it (Beer) a toxic physic in the stead of a drink to keep the body in Health." There are other similar references going to show that though inorganic chemistry was imperfect in nomination, there was, as De Candolle puts it, "an enormous practical importance of malt liquors developed as a beverage, and a corresponding tendency to carry backward its valuation as an article of the *materia medica.*" In the *Journal de Médecine de Bruxelles*, 1867—also in Wiggers and Husemann, *Jahresbericht*—we find a first-rate fact-photograph: "Elaboration in malting amounted simply to a gradual change (*divertissement*) from an aqueous to an alcoholic solution of the distinguished principles of barley. * * * That this resulted in removing the malt liquors from the drug shop to the public house is not strange, though we fail to see why there was such a tardy cognition of the fact that the alcoholic was superior to the aqueous solution as a therapeutical agent. The humble *pharmacien* of Troges, who showed that malt liquor is valuable in proportion to the amount of malt extract contained, was the instrument of developing the chemical axiom that while this extract may be more apparent in the aqueous solution, it is of much greater value in the alcoholic solution. * * * Thus we have it that the therapeutical value of beer is gauged by the amount of true malt extract present." The analysis of barley resulting in the chemical appreciation of the malt extract as of therapeutical worth, led to its laboratory derivation years after malt became officinal in the German pharmacopœia. Wege-Mouries, laboring to show that the gluten cells (*membrane embryonnaire*) were of "albuminous detail as the remedial principle," was forestalled by Meyer (though some claim the honor for Von Tschudi), who "placed a true aqueous malt extract on the shelf of the pharmacist, as the active principle of malt, worth a price as a food and as a drug. For it as sustenance," continues Meyer, "we eat the treated barley, and for it we can drink for medicinal purposes."

Thus we have come to claim for malt a value as a food-medicine, and to gauge its value by the quantity of extractive furnished. It was at first shown that the determination of the extractive was its nitrogenous principles, but later research discovered the more intimate fact that the principle rich in nitrogen has an estimation of its own. Canstatt—presumably the first to isolate it—and, as well, Parkinson, Fluckiger and others, described this basic substance as "diastase," a term familiar enough in our time.

Diastase, which is a product of malted barley, has the properties of animal diastase. This being the case it is no difficult task to place in nomination the intrinsic value of malt as a therapeutical agent.

Upon these deductions Magendie predicates "the value of beer" (*Pharm. Conf.*, 1869), and Th. Martins says "Good beer and good liquid malt extract, for similar reasons, are of tonic properties in proportion to the estimation of this agent." "If present, the agent is a food and a medicine. If absent, the agent is —— poor beer and sloppy extracts." "Sophistication may take the form of 'improving' the extract by adding certain foreign agents (as quassia, gill, sweet gals, gentian, etc.), and of 'bettering' the beer with the many adulterations described by Etti (*These*). * * * But in effect, the active principle is destroyed when so sophisticated."

Giving that principle, treated with not more than ten per cent. of alcohol, and it is a food medicine. It is thus that we write malt a food medicine, a nutritive tonic. It promotes digestion, insures an appetite and invigorates the nervous system. It increases the secretion of the intestinal mucous membrane, and promotes

the flow of the bile and the gastric juice. The preferable form for its exhibition is the fluid malt extract, and of fluid malt extracts there are a legion. Their value is in proportion to the amount of the alcohol and of the active principle present. If the latter is present as diastase, and if there is more than sufficient alcohol for its preservation present, it is something other than valuable. The same applies to the malt liquors.

In the chemical nature of things a malt extract and a malt liquor should have properties describable as those of a food medicine. I think I do not exaggerate in saying that of the ideal extract and the ideal beer, the chemist expects an alimentary and a pharmacal value, which are elected upon the same basis as are alcohol and milk. The extract should stand as (Weddell) "a concentration of ale (or beer)," as a tonic of the nutritive order, as a nutrient of the tonic order, as a sustenant, as a prophylactic and as a remedy. But the pharmacist puts forth cheap "extracts," and there are malt liquors of uncertain quality. We know them, and on the prestige of a glorious name they have claim on our favor. We prescribe, and are disappointed; and in consequence there are not wanting those who have reasons for doubting the therapeutical efficiency of malt preparations. I confess to surprise upon examining analytically the "extracts" in the market—one a very strong beer, another a weiss beer, another a watery solution of glucose, and several with a characterization of burnt sugar and something very like whiskey.

There are, however, reliable liquid extracts of malt. Such a one is a concentrated fluid extract of malt and hops, favorably known from its manufacturer's name as the "Best" tonic. I have to find a better illustration of my deductions than it affords. In its composition the determination of the derivatives of the active principle are perfect, and the resident principles are held in association with just sufficient hops to magnify the therapy of the principles of the two elected ingredients.

The analysis shows the presence of 6.250 per cent. of total solid extractive, or more than 2.500 per cent. more than is afforded by some of the syrupy "extracts." The alcohol by weight may be placed under five per cent., and the maltose and dextrine represent hardly less than 8.500 per cent. Had I space I might show in "deadly parallel" how other malt extracts lack in these qualifications; but I will only say that upon examination I find none possessing a stronger power of acting on the starch than this "Best" tonic.

It is a constructive, aiding digestion, easily assimilable, a food medicine in the full sense of the term. It forms flesh, and bone, and heat. "Give me," says Lavissier, "a concentrated active principle of good wine—and none but good wine would yield it—and I will give the *materia medica* a noble addition." Given by this extract is the active principle of the best of beer. "When I need new saddle-bags," said the worthy Dr. Timothy Childs, "I go to the shoemaker who makes for Parson Allen, and get them of that same leather, well knowing that prime leather for good shoes is prime for saddle-bags as well." The application touches our point. The malt from which is made the leading American beer is the same from which comes this extract.

It has a fine efficacy in aiding digestion, and is a prophylactic and a remedy for dyspepsia and gastric catarrh, especially where there is acidity and flatulence. It is of equal importance in intestinal derangements due to a sluggish action of the digestive organs, and, for the same physiological reasons, as a preventive and cure for seasickness and anorexia. It is of advantage in "general debility," improving nerve force, flesh and vigor. In wasting diseases, and in the convalescence from acute disorders, it is indicated, imposing the nutritive power of a food and a tonic. The hops have their own worth, especially where cerebral anæmia would interfere with the exhibition of a tonic. There is also evidenced (Garnier, *loc. cit.*) the well-known milk-producing powers of good malt.

In conclusion: Recognizing that it is well to utilize as a constructive the active principle of malt, I question if there be a better way than of obtaining it in the form of the concentrated extract. If we seek the agency of alcohol we can obtain it in better forms; if the agency of slops, we can mix our own; if the agency of the active principle in an impoverished form, we can have the choice of many "extracts." The world has progressed since Shen-Nung's days, but the path of progress has not always been straight.

OUR MISSION.

WHAT THE AMERICAN ANALYST IS DOING

FIGHTING ADULTERATION.

The steadily growing favor which the AMERICAN ANALYST is constantly receiving at the hands of both the reading and the business public is the best evidence that could be afforded of the useful field of effort it occupies. It was the pioneer journal in this country to take up the fight against adulteration, and stands to-day, by public acknowledgment, the only competent exponent of the principles involved in that momentous struggle. To this end the realm of sophistication and fraud has been thoroughly explored, and its corruptions, as far as practicable, exposed to the public view. Charlatans, adulterators, and handlers of poisonous food have been summarily and uncompromisingly dealt with. Humbugs seeking to enrich themselves, through the sale of high-sounding specifics for human ailments, have been subjected to the crucial test of thorough chemical analysis of their goods, and where the latter, as too frequently occurred, proved to be utter frauds in name, composition, and pretended effects upon the system, the real facts have been placed before our readers in order to save the public from further unconscious imposition. The veil of chemical mystery in which tricksters of this kind ostentatiously envelop their processes of manufacture, protects them as yet from the criminal laws to which other confidence operators are held amenable, and the only method for counteracting their nefarious schemes is through public exposure by the newspaper press. In exposing this species of fraud, the AMERICAN ANALYST has conferred a benefit upon the community, to which the latter is giving grateful and substantial recognition.

SANITARY AND FOOD REFORMS.

In addition to the foregoing, the AMERICAN ANALYST is in constant co-operation with the Boards of Health of this and other cities, in efforts to secure sanitary and food reforms through organized methods, and while it is nobody's mouthpiece, it is conceded to be the only popular medium through which those bodies can bring their purposes and action intelligently before the general public. Reaching as it does all classes, manufacturers, merchants, physicians, chemists and private families all over the land, its influence is exerted over a vast radius, producing results as visibly marked as they are widespreading.

HOUSEHOLD MATTERS.

"The American Household," edited by Miss Juliet Corson, is a department of special interest to ladies. It is very different and far superior to the ordinary cook book in that it tells the housewife suggestively what to buy, what foods are in season, as well as how to prepare the many varieties of dishes, all in a practical way easily followed. Other matters of great interest to housewives are also discussed.

PRACTICAL DISCUSSIONS.

Numerous other interests are also faithfully represented in our columns, such as the regular series of articles entitled, "Some Every Day Suggestions," relating to common experiences of society, the question of hygiene, and an infinite variety of practical subjects. In short, the AMERICAN ANALYST always keeps abreast in giving the fullest information on all matters directly or indirectly in the line of its proper field.

VOLAPUK.

Among the striking features of this Fourth Volume will be a course of progressive lessons in the new Universal Language, Volapuk, so arranged as to enable our readers to readily instruct themselves in this commercial tongue. This series alone will be found to be worth several times the cost of a year's subscription.

SCIENTIFIC INVESTIGATIONS.

The business transacted in the office of the AMERICAN ANALYST does not by any means all come to the surface in the pages of the paper. Minute analyses of chemical compounds, careful assays of minerals, examinations of questionable oils or doubtful condiments, and the many subtle operations incident to laboratory work are constantly required of us by correspondents far and near, and the results in many cases are not publicly recorded. In this manner, the influence of the paper encompasses a vast radius, from every point of which we receive constant expressions of approval, verbally, and in more substantial shape.

ITS VALUE TO ADVERTISERS.

No person can scrutinize the advertising pages of this journal without being impressed with the uniform high character of the numerous houses who find our columns the most desirable—because the most effective—medium for advancing their interests throughout the country in the several directions to which they respectively pertain. The steady growth of our subscription lists, extending to every State in the Union, and in fact all over the world, affords another gratifying evidence of the approval given to our endeavors to sustain genuine manufactures, and to expose spurious, fraudulent, and harmful knavery.

SUBSCRIPTION $1 PER YEAR.

Considering the amount of practical information regularly embodied in its contents, together with the fact that the subscription price for an entire year is only one dollar, we believe the day is approaching when the AMERICAN ANALYST will be regularly welcomed in every intelligent household in the land. Address,

ANALYST PUBLISHING CO.,
19 *Park Place, N. Y.*

$10 REAL VALUE **FREE!**



Our new stamping outfit is **free** to every reader of this publication; it contains **100** perforated stamping patterns and includes a great variety of all sizes that are wanted. This outfit is a real work of art; no stamping outfit has ever been offered heretofore, on which anything like so much artistic ability was brought to bear. With each outfit is A BOX OF BEST STAMPING POWDER, PAD, AND BOOK OF INSTRUCTIONS, giving full directions for stamping, tells how to make the **powder** and stamping **paint**, contains instructions for **Lustre, Kensington** and **Hand painting**, tells colors to use in painting—red, white, blue, yellow, pink and other flowers; also contains hints and instructions on other matters, too numerous to mention. Bought singly, or a few patterns at a time, at usual prices, the equal of the above would cost **$10.** Although it is **free,** yet this is the **Regal Queen of Stamping Outfits** and on every hand is acknowledged to be superior, yes, very much superior, and very much more desirable than those which have been selling for **$1** each and upwards. By having **200,000** of these outfits made for us, during the dull season, we get them at first cost; the manufacturer was glad to take the order, at cost, that his help might be kept at work. All may depend that it is the very best, most artistic and in every way desirable outfit ever put before the public. Farm and Housekeeper (monthly, 16 large pages, 64 long columns, regular price 75 cents a year) is generally acknowledged to be the best general agricultural, housekeeping and family journal in America; it is entertaining and of greatest interest, as well as useful; its contributors embrace the widest range of brilliant talent. Furthermore, we have lately become managing owners of that grand monthly, **Sunshine, for youth; also, for those of all ages whose hearts are not withered;** 16 large pages, 64 long columns, regular price 75 cents a year. Sunshine is known favorably as the best youth's monthly in America. The best writers for youth, in the world, are its regular contributors; it is now quoted all over the world as standing at the head. Both papers are splendidly illustrated by the best artists. We will take 200,000 **trial year** subscribers at a price which gives us but a moderate portion of the **cost.**

FREE! Furthermore, every trial year subscriber, for either of the papers will receive **free** by mail our new **100** pattern Stamping Outfit. Trial year subscriptions will be received for either of the papers as follows: **1** subscription and **1** outfit, **32** cents; **2** subscriptions and **2** outfits, if sent at one time, **55** cents; **4** subscriptions and **4** outfits, if sent at one time, **$1.** For $1 send a dollar bill, but if it does, send **1-cent** postage stamps. Better at once get three friends to join you, at 25 cents each; you can do it in a few minutes and they will thank you; papers will be mailed regularly to their separate addresses. While **trial year** subscribers are served for much **less than cost,** it proves the rule that a very large proportion of all who read either paper for a year, want it thereafter, and are willing to pay the regular price of 75 cents a year; through this, as time rolls on, we reap a profit that satisfies us.

FREE! The trial year subscriptions are almost **free,** and this the **Regal Queen of Stamping Outfits**—the best ever known—is entirely **free.** It is the greatest and best ever made to the public. **Large sizes** of patterns—every size that can be desired is included; all other outfits surpassed, by this, the best, the most artistic, the **Regal Queen.** Below we give a list of a few of the patterns; space is too valuable to admit of naming all: 1 Poppies for Scarf, 7 1-2 inch; 2 Tidy design, 7 1-2 inch; 3 Splendid Tinsel design, 8 inch; 4 Golden Rod, 4 inch; 5 Pond Lilies: 6 Pansies; 7 Moss Rose Buds; 8 Tube Roses; 9 Wheat; 10 Oak Leaves; 11 Maiden Hair Ferns; 12 Boy; 13 Girl's Head; 14 Bird; 15 Strawberries; 16 Owl; 17 Dog; 18 Butterfly; 19 Apple Blossoms; 20 Calla Lily; 21 Anchor; 22 Morning Glories; 23 Japanese Lilies; 24 Rabbit; 25 Bunch Forget-me-nots; 26 Fuchsias; 27 Bell Drops; 28 Fan; 29 Clown's Head; 30 Cat's Head. **70** other splendid patterns are included in this **Regal Queen** of stamping outfits—in all **100** patterns. Safe delivery guaranteed. Possessing this outfit any lady can, without expense, make home beautiful in many ways, can embroider childrens' and ladies' clothing in the most charming manner, and readily **make money** by doing stamping, Lustre, Kensington and Hand painting for others. A good stamping outfit is indispensable to every woman who cares to make home beautiful. This outfit contains patterns for each and every branch of needle work, flower painting, etc., and the **Book of Instructions** makes all clear and really easy. This outfit will do more for HOME and LADIES than many times the amount of a trial year subscription spent otherwise; no home should be with out it. The beautiful designs of this REGAL QUEEN of outfits ARE ALL THE RAGE wherever seen; when ever one or two reach a locality their fame spreads, and many TRIAL YEAR subscriptions usually follow. Many who have paid from **$1** to **$2** for outfits and were satisfied until they saw our designs, have secured our outfit and laid aside forever the others. Those who subscribe will find the papers well worth several times the trifling cost of a trial year subscription, and the majority will make up to us the loss, that this year we incur, through such a low price, by continuing subscribers, year after year, at the regular price, which all will be willing to admit is low enough. The money will gladly be refunded to any one who is not fully satisfied. Address, GEORGE STINSON & CO., BOX 356 Portland, Maine.

Back Numbers of the current volume may be had at this office, Five Cents each.

"ALL NATIONS WITNESSES."

THE WONDERFUL MISTAKES OF SCIENTISTS AND EDUCATORS.

"Prove all things" seems to be the guiding maxim of the people of this age.

This would be all right, were it not for the "know-alls" in every community, who are sure that every introducer of a new idea is a "crank," and that every new invention is "utterly impracticable."

The astonishing fact is that in this class educated men and scientists are found. In the days of George Stephenson, the perfector of the locomotive engine, the scientists proved conclusively that a railway train could never be driven by steam power successfully without peril; but the rushing express trains all over the world show how mistaken they were. There went up a guffaw of laughter at Professor Morse's proposition to make the lightning of heaven his errand boy, and it was proved conclusively that the thing could never be done; but now all the news of the wide world by Associated Press, put in your hands every morning and night, has made all nations witnesses.

Rev. Dr. Talmage, in one of his sermons, says: "If ten men should come to you when you are sick with appalling sickness, and say they had the same sickness and took a certain medicine, and it cured them, you would probably take it. Now, suppose ten other men should come up and say: 'We don't believe that there is anything in that medicine.' 'Well,' I say, 'have you tried it?' 'No, I never tried it; but I don't believe there is anything in it.' Of course you discredit their testimony. The sceptic may come and say: 'There is no power in your religion.' 'Have you ever tried it?' 'No, no.' 'Then avaunt!' Let me take the testimony of the millions of souls that have been converted to God, and comforted in trial and solaced in the last hour. We will take their testimony as they cry, 'We are witnesses!'"

The proprietors of Warner's safe cure have received over 10,000 voluntary testimonials to the efficacy of that medicine. These have come from almost every civilized country, and they may fairly claim "it has made all nations witnesses."

The evidence comes from all classes. The highest medical authorities, like Dr. Robson, late surgeon in the English navy, and Dr. Wilson, editor of *Health*, of London, England, and clergymen of the highest reputation, like Rev. Dr. Rankin, ex-chaplain of the U. S. senate, and Dr. Kendrick, of the Rochester University, one of the international revisers of the new testament, are among the published witnesses.

Hundreds of these testimonials have been and are being published. They can be easily verified. A standing offer of $5,000 for proof that any one of them is not true, so far as the proprietors know, is a fair guarantee of their genuineness.

If a man is suffering from any one of the ailments, of which there are so many, growing out of kidney derangement, is it not more than foolish for him to refuse to try Warner's safe cure when thousands testify they have been cured by it?

Think of it!

The men who refuse to believe that anything can be valuable because it is in conflict with old ideas and methods are the men who "get left" in this world and go before their time to try another.

CATARRH CURED.

A clergyman, after years of suffering from that loathsome disease, catarrh, and vainly trying every known remedy, at last found a prescription which completely cured and saved him from death. Any sufferer from this dreadful disease sending a self-addressed stamped envelope to Prof. J. A. Lawrence, 212 East 9th Street, New York, will receive the recipe free of charge.

Subscriptions $1 per year. Now is the time to subscribe.

THE HAIR IN WINTER.

While nature makes every allowance for the seasons and all the other changes which mark organic life upon the globe, it does not, and necessarily cannot, for those incessant variations of habit, fashion and craze which characterize civilized society. In a condition of nature the hair, to a certain extent, meets the wants of the physical organization. At the approach of warm weather man, like all the other higher members of the animal kingdom, begins to moult, if the term may be allowed, and otherwise thin the hairy covering which keeps his head warm and comfortable. Toward the fall the hair grows rapidly, and every provision is made for keeping up the normal temperature of the body. In winter the skin contracts, the pliable sacs and pores become stiff, and the hair is held firmly at right angles to the scalp. At this time of the year the hair becomes electrical, as it is popularly called, and will in fact emit sparks if rubbed or otherwise excited. It is dry, elastic, and wavy; in short, in the same condition as the fur of animals and the plumage of birds at this time of the year, warm and heavy itself, and so arranged as to keep a mass of warm air about the head. All this is changed by civilized life. Heated homes, late hours, scientific cuisines, and refined habits, so-called, change winter to summer during at least nine-tenths of the entire day. It is not done in a mass, but piecemeal. The average man passes an hour in a room where air is at summer-heat, and then plunges into a cold hall, or a colder street, where the thermometer registers the zero-point. From here he again enters a tropical atmosphere, and so continues the season through. As a result the body is weakened, the pores excited and opened, the hair loosened, and its elasticity destroyed, and the scalp put into a deplorable condition.

This is why hair and scalp disorders are so prevalent in mid-winter, and why baldness of both men and women becomes commoner every year. As it is impossible to return to primitive modes of living and imperative to make the best out of our surroundings, true wisdom recommends that course of action which provides for these innumerable changes. The best system to pursue is that which gives the hair its greatest vitality and the scalp its highest activity. To effect this every man or woman should carefully shampoo the hair and scalp regularly at least once a week, being cautious to use the finest toilet-soap, ammonia or borax, for the purpose.

After shampooing the head should be carefully washed with lukewarm water so as to remove any and all free alkali, dust, dirt, dead skin and loose hair. After this washing it should be vigorously rubbed with a Turkish or soft towel until everything is dry, the scalp a handsome pink, and the hair has assumed a fluffy, elastic and wavy condition. This would be the final point were it not that the head is too dry and the follicles a trifle exhausted from the treatment. This condition demands a scientific dressing. Any first-class treatment will suffice, but the best that can be obtained is afforded by using the hair vigor prepared by Dr. J. C. Ayer & Co., of Lowell, Mass. It is a simple combination of the most improved ingredients, and contains nothing that is not approved by the medical faculty and recommended by the great text-books of the world. The pure, fresh vegetable oil which is its basis softens the epidermis of the scalp, opens the pores and glands, and makes the hair soft, silky and lustrous. The spirits, which make a second constituent, act as a mild excitant and rubefacient, and tone up the hair-building processes. The pharmaceutical elements revive and stimulate weak or disordered tissues, and bring back the normal health and activity of those functions.

Following out these suggestions, and using Ayer's Hair Vigor, will, in every case, offset the evil effects of modern civilized life, and give to each man and woman a handsome and permanent head of hair.

INDUSTRIAL NOTES.

A DOLLAR BILL

can be made for every hour's work. We will show you how to do it, reader. All is new, sure, light and pleasant. Both sexes, all ages. Business admits of your living at home. We start you *free*. Anyone can do the work. Many make much more than $1 per hour. No special ability or training required. Reward sure. All workers meet with grand, rushing business. Address at once, Stinson & Co., Portland, Maine.

The opera "Pinafore" had a great run, but give me a pinafore laundried with CRYSTAL BLUE.

Colgan's "Taffy Tolu" cleanses the mouth and gives a healthy appetite. Travelers, singers, speakers find it a great comfort. A tablet chewed a few minutes will demonstrate its value.

VIBURNUM COMPOUND.

A narcotic is only a temporary relief, not a curative agent—Viburnum Compound acts directly and specifically as a remedy. All narcotics and sedatives are followed by a reaction which often is more injurious than the original disease. Viburnum Compound has no unpleasant nor any unfavorable reaction.

HEALTHFUL BREAD.

In spite of all that has been said on the subject, people will eat bread made from flour from which all the bran has been removed. Nearly all the phosphates, the most valuable elements for the nutrition of the nerves and bones, are thus removed, and it is also a recognized fact amongst physicians that great injury results in consequence. Any preparations which will replace these valuable elements are certain to be of great benefit to those who use them, compensating as they do to a great extent for the absence of the bran. A number of years ago Prof. Horsford, of Cambridge, suggested the use of a baking preparation for raising bread, biscuit, etc., which would supply the requisite phosphates, thereby introducing these necessary elements into the food without cost or trouble. After years of experiment and labor he succeeded in producing the desired preparation, and if report be true, he has succeeded wonderfully well in selling it. The preparation consists of an acid phosphate of lime which combined with bicarbonate of soda in raising bread, biscuit, etc., leaves in the product the very phosphates required by the system and which are essential to good health. The idea was an ingenious and valuable one, and needs only to be thoroughly understood to be fully appreciated.

Colgan's "Taffy Tolu" makes pink gums, pearly teeth, and a fragrant breath. Thousands give up tobacco by using this delicious gum.

USE MORE ACID PHOSPHATES.

In the artificial conditions imposed by modern civilized life, we need more phosphates. The lovers of wining and dining have revolutionized the bill of fare; but, unfortunately for themselves and for society at large, have overlooked physiological and chemical science.

They have substituted green potatoes, onions and tomatoes from Bermuda, Florida and California for the heavier and more wholesome, though less palatable, ones which in the past made up the daily diet in winter. They have added to the bill of fare fresh fruits and vegetables from the Pacific coast, from the hot houses of the middle States and from the south Atlantic States. By means of the new evaporating and preserving processes of chemical and mechanical science, they preserve the most delicate tissues of midsummer through the autumn and long winter months. These practices enable us to have a table whose variety, excellence and delight can be hardly overestimated. Yet in this change, while every care is taken of the palate and assimilation, one of the most vital wants of the body is overlooked. The urgent necessity for phosphorus-containing compounds, and especially for phosphates, the favorite form in which nature uses the element, is not

taken into consideration whatever. The new foods and the new forms of old foods, while delicious, are all more or less deficient in this regard. There is only one way to offset this deficiency, and that is by imitating nature and employing the phosphates directly in our culinary departments. Science has shown a dozen methods whereby this invaluable compound can be produced economically and well. The best and simplest is that pursued by the United States Chemical Company, which manufactures an acid phosphate so pure, uniform and excellent as to be the standard article of its class in the markets of the world. For all purposes for which the life-giving product is used, this acid phosphate is the best that can be used by manufacturers, bakers, druggists and confectioners, and the best that can be recommended for household use. In home life it should be used with a liberal hand. As an ingredient of baking powder, as an addition to dough or compounds in which soda or saleratus are employed to lighten, as a substitute for tartaric, citric, acetic and lactic acids, and as a corrective of many forms of unpleasant alkalinity, it cannot be referred to in too complimentary language. Its use is pleasant to the palate, invigorating to the stomach and beneficent to the system. It more than supplies all the elements which nature needs to build up healthy bones, nerves, brain and teeth, and beyond these to produce pure blood, sound flesh and that condition of the body which means perfect health and strength.

ON DISTILLATION.

One of the most important lessons taught by modern chemistry is that the long series of alcohols and ethers known as fusel oil, which are found in all distilled liquors, is the chief cause of injury to the drinker and of inferiority in the liquor itself. While most distillers do not practically recognize this profound truth in their daily business, a growing minority have long embodied it in their work and have begun to reap the reward in popularity and an ever-increasing demand for their goods.

In the distillation of liquors so as to avoid the deadly fusel oil, nothing more than a little extra care is needful.

The raw whiskey, for example, that comes from the still exhibits a variety of conditions. When it first runs over it carries with it volatile oils of little or no consequence. Then comes a stage in which alcohol and water, comparatively pure, are the chief elements. Beyond this is the stage in which alcohol, fusel oil and water are the leading factors. If the distilling be confined to the second stage, a remarkably pure and wholesome whiskey results. It seems at first sight a little wasteful to not utilize the copious distillate in the third stage, but the immeasurable superiority of the result more than countervails the loss.

At this point the manufacturer has again an option offered to him in respect to treatment. He can store the raw whiskey to "age," that is, to have the fusel oils break into agreeable and savory secondary compounds, or he can redistill the strong liquid upon the same basis as before and so obtain a redistilled whiskey almost free from the fusel oil and of a quality vastly better and finer than what is otherwise obtained. The difference may seem trifling, but in realty is very great. A prominent distiller has furnished the AMERICAN ANALYST with two samples which will illustrate this article. The one is a raw whiskey direct from the doubler. It is yellowish in color and tastes and smells strongly of fusel oil. The second is the same whiskey redistilled in the manner mentioned. It is water-white, with but the slightest suggestion of other alcohols, and is delicious to both nostril and palate.

Upon a crucial analysis the raw whiskey showed two per cent. of fusel oil and other objectionable bodies; the redistilled only three-quarters of one per cent., a difference of almost three to one.

The redistilled whiskey, even raw, is far better from a hygienic and chemical standpoint than the other even when five years of age. When properly aged itself it makes a scientifically pure, wholesome and admirable stimulant. Why do not all the distillers of the land discard their present penny-wise and pound-foolish policy and produce whiskey in this manner? It would be better for them and a thousand times better for the great American public.

This is the celebrated Y. P. M. Whiskey, distilled by the Alexander Young Company, Limited, of 700 Passyunk avenue, Philadelphia, and for sale by Park & Tilford and Acker, Merrall & Co., New York. It possesses the distinction of being the only whiskey known to the medical profession which can be used as a stimulant without raising the temperature of the patient, and was thus employed by Dr. Reyburn in the case of President Garfield.

A PLAIN LENS.—A lens which magnifies, and yet is perfectly flat on both sides, is a scientific novelty. It is made at Jena, by the manufacturer of Professor Abbie's new optical glass. The lens consists of a single disk, the density of which varies so that its refractory power decreases regularly from the surface inward.

RAILROAD CAPACITY.—The carrying capacity of a railway car of ten tons has been figured on by somebody, who gives this as a result: Wheat, 340 bushels; corn, 400 bushels; potatoes, 430 bushels: apples, 370 bushels; oats, 680 bushels; lumber, 6,000 feet; butter, 20,000 pounds; flour, 90 barrels; whiskey, 60 barrels; wood, 6 cords; cattle, 18 to 20 head; hogs, 50 to 60 head, and sheep, 80 to 100.

UNEQUALLED Ask your Grocer for, and insist on having, LEA & PERRINS' Sauce, "The Worcestershire." It is known thoughout the whole civilized world as the Best and most Delicious Sauce. **DELICIOUS.**

SCOTCH MARMALADE, Jams, Fruit and Wine, Jellies, &c.
By James Keiller & Son, Dundee.

SCOTCH BISCUITS, Albert, Water, and Oat Cake,
By Robert Middlemass & Son, Edinburgh.

RACAHOUT des Arabes, by De Langrenier, Paris.

BAY WATER, West India, in cases, one dozen bottles.
Sold by all first-class Grocers.

JOHN DUNCANS' SONS, 43 Park Place, New York. Agents for the United States.

NEW STAMPING OUTFIT FREE!

OUR COUNTRY HOME, a mammoth 20 page, 80 column Illustrated Paper devoted to ladies' fancy work, home decoration, fashions, housekeeping, stories, and a host of interesting matter for the home, written expressly for its columns by the best known writers in the land. Wishing to introduce it into new homes where it has not already been taken, we make this great offer: Upon receipt of only **25c.**, we will send Our Country Home 3 months, and to every subscriber we will also send free and post-paid, our New 1888 Stamping Outfit. It contains **65** perforated patterns, all entirely new, and designed expressly for this outfit, as follows: 1 Forget-me-not Alphabet, 1¼ inches high; 1 magnificent pattern for lustre painting, 17x7 in.; 1 charming landscape, "Our Country Homes," for tapestry painting, 17in. 1 Pansy spray for Kensington Painting, 9 inches; 1 Border for button hole sketch, 8 in. 1 cluster of Pine Cones, 7½ in. 1 fine Roman vase, 7 in. 1 spray golden rod, 7in. 1 gooseberry vine 7 in. 1 beautiful child's head, 6in. 1 design, tulips, 6in. 1 spray, oak and acorn, 5¾ in. 1 group dog roses, 5¾ in. 1 pretty cracklework design, 5 in. 1 spray lilium longiflorum, 5 in. 1 spray malden hair fern, 5 in. 1 laurel spray, 5 in. 1 bird on tree, 5 in. 1 design, "Our Dog Hero," 5 in. 1 group fuschias, 4½ in. 1 cup and saucer, 4¼ in. 1 spray fruit, 4¼ in. 1 flying bird, 4 in. 1 forget-me-not spray 4 in. 1 barbotine vase, 3½ in. 3 bunches daisies, 1 round vase, 1 oblong jar, 1 corner for tray cloth, 1 bunch wild roses, 1 bird singing, 1 monogram design, 2 ferns, 1 bunch cherries, 1 poppy, 1 calla lilly, 1 golden rod, 1 cluster primroses, 1 argus butterfly, 1 box stamping powder, 1 patent poncet, 2 pamphlets, "Instructions for Using the Stamping Outfit," and "Art of Kensington and Lustre Painting," a new book, just out, teaching how to make knitted and crocheted silk purses, and a variety of articles of perforated card board, wall pockets, needle cases, &c., making a magnificent and costly present. Remember, we give the entire outfit described above free to everyone sending **25c.** for three months' subscription to our paper. This is a brand new stamping outfit and must not be confounded with the cheap, catch-penny affairs which are flooding the market. We send five subscriptions and five outfits for **$1.** We guarantee perfect satisfaction or will refund the money to any dissatisfied subscriber. Address, **Publishers OUR COUNTRY HOME, Wallingford, Conn.**



PROTECT YOUR HOMES!

MARLIN DOUBLE ACTION REVOLVER.

A GOOD REVOLVER no longer costs a Fortune



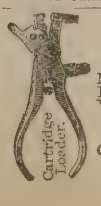
These revolvers are an exact duplicate of the celebrated SMITH & WESSON. .38 Caliber, using Centre-Fire Cartridges.

Self-Cocking, Automatic Ejecting,
FULL NICKEL PLATED, RUBBER HANDLE.
WARRANTED EQUAL IN EVERY RESPECT TO THE
SMITH & WESSON.
For sale by Hardware and Gun Dealers everywhere.
Manufactured by THE MARLIN FIRE ARMS CO., New Haven, Conn.



BEST IN THE WORLD!

MARLIN Magazine Rifle.
For large or small game, all sizes. The strongest shooting rifle made. Perfect accuracy guaranteed, and the only absolutely safe rifle on the market
BALLARD GALLERY, SPORTING AND TARGET RIFLES, world renowned. Send for Illustrated Catalogue. **MARLIN FIRE ARMS CO., New Haven, Conn.**



IDEAL RELOADING TOOLS
WILL SAVE ONE-HALF THE COST OF AMMUNITION.
Made for all sizes of Cartridges which are used in any of the following Rifles or Pistols: Marlin, Colt's, Winchester, Ballard, Stevens, Remington, Whitney-Kennedy, Smith & Wesson; also for all gauges and makes of
SHOT GUN SHELLS, PAPER AND BRASS.
Cheaper and better than any other. Send for Price List of these tools to
Ideal Manufacturing Company,
Box 1064 G. NEW HAVEN, CONN.



A BUSINESS BENEFIT.

ADVANTAGES TO ADVERTISERS OFFERED BY THE AMERICAN ANALYST.

It has not the limitations of a daily paper. No one reads yesterday's paper. A monthly lives at least a month, while a semi-monthly is fresh twice a month, and its audience is not limited by geographical lines, but the circulation is all over the United States and Canada.

It contains matters of interest to everyone, especially the ladies of the household, and is, therefore, sure of a careful perusal. Our audiences are intelligent and of the better classes, who have money to spend, and any well worded advertisement in our columns, giving real information, will receive a careful perusal.

Our rates are as low as our circulation affords. Large circulation and original matter cost money, and those advertisers who desire to realize these benefits must expect to pay reasonably for them.

Advertisements in our columns are permanent. Most of our subscribers bind their numbers.

Our advertisements are set up in an attractive form, sure to call the attention of the reader.

Anything that our readers want, or for which a demand is to be created, not wholly of a local nature, will pay to advertise with us.

We take only advertisements from legitimate houses of really meritorious goods, and give them all the editorial assistance they deserve; consequently our readers knowing this, have confidence in advertisements contained in our columns.

The fact that we have the best and largest houses in every branch of trade advertising with us, and that they always renew as their seasons arrive, proves beyond a doubt that they have found the AMERICAN ANALYST a good advertising medium. Why should not you?

THE

GILBERT S. GRAVES

Standard Starch,

BUFFALO, N. Y.

IT IS MANUFACTURED WITH ENTIRELY NEW MACHINERY AND BY LATEST IMPROVED PROCESS.

IT IS GUARANTEED to be fully equal to BRANDS SOLD AT FANCY PRICES, and MUCH SUPERIOR TO STARCH SOLD AT EQUAL PRICES.

THE MIRROR GLOSS

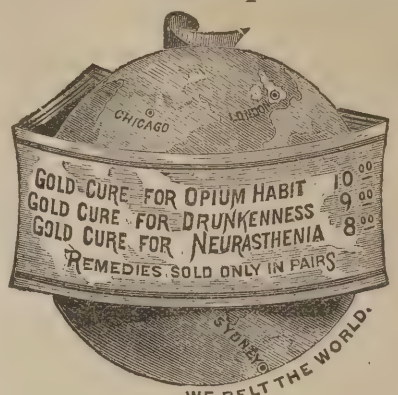
Is the finest Starch made for the Laundry, and cannot be excelled. It will not injure the finest Laces.

THE CORN STARCH

For culinary purposes is prepared with the greatest care, from selected Corn, and is a most delicious and wholesome article of food.

ASK YOUR GROCER FOR IT.

THE LESLIE E. KEELEY CO.



DWIGHT, ILLINOIS.

We solicit an investigation of our system and methods and will gladly send to any one, very interesting reading matter on the OPIUM HABIT, DRUNKENNESS and their effects and cure. Physicians specially invited to examine, and if desirous of trying our remedies, liberal arrangements will be made with them. Prompt and frank attention to correspondence. The remedies are put up safely in stout boxes and sent masked. Full directions sent.

THE LESLIE E. KEELEY CO.,

Dwight, Illinois.

LAST OPPORTUNITY!

For CHEAP EXCURSION To

CALIFORNIA.

$72 from St. Louis via Iron Mountain Route
$60 from Kansas City via Missouri Pacific Ry

Tickets are good for six months, limited to sixty days for going passage with stop over privileges at pleasure within limit of west-bound passage. Special excursion trains leave St. Louis via. Iron Mountain Route, February 16th and Kansas City via. Missouri Pacific Railway, February 17th. For All coupon offices in the United States and Canada will sell tickets to Los Angeles, San Diego and San Francisco for this EXCURSION.

$93 Sewing Machine Free!

We want one person in every village, town and township, to keep in their homes a line of our ART SAMPLES; to those who will keep and simply show these samples to those who call, we will send, free, the very best Sewing Machine manufactured in the world, with all the attachments. This machine is made after the SINGER patents, which have expired. Before the patents run out, this style machine, with the attachments, was sold for $93; it now sells for $50. Reader, it may seem to you the most WONDERFUL THING ON EARTH, but you can secure one of these machines ABSOLUTELY FREE, provided your application comes in first, from your locality, and if you will keep in your home and show to those who call, a set of our elegant and unequaled art samples. We do not ask you to show these samples for more than two months, and then they become your own property. The art samples are sent to you ABSOLUTELY FREE of cost. How can we do all this?—easily enough! We often get as much as $2,000 or $3,000 in trade from even a small place, after our art samples have remained where they could be seen for a month or two. We need one person in each locality, all over the country, and take this means of securing them at once. Those who write to us at once, will secure, FREE, the very best Sewing Machine manufactured, and the finest general assortment of works of high art ever shown together in America. All particulars FREE by return mail. Write at once; a postal card on which to write to us will cost you but one cent, and after you know all, should you conclude to go no further, why no harm is done. Wonderful as it seems, you need no capital—all is free.

Address at once, TRUE & CO., AUGUSTA, MAINE.

DEGREES,

COLLEGE AND HIGH SCHOOL,

Conferred *without residecne.* Any one can secure this desirable end by pursuing a course of study by

CORRESPONDENCE

under eminent College Professors, at slight cost.

Those who have left College without graduating should write us for requisite conditions and graduate as soon as possible. Full information of Courses, Professors, Monthy Questions, etc., given in the

UNION READING CIRCLE,

A large 18-page literary Journal, sample copy of which and application form of membership will be mailed to any address on receipt of 10 cts. in postage stamps.

Address COR. UNIVERSITY, BOX O, CHICAGO, ILL.

N. B.—Situations to teach *free* to members and subscribers. Agents wanted.

RAPID, SIMPLE, CHEAP, PERFECT.

TYPEWRITING DUPLICATED,

ON THE

WONDER LITHOGRAPH,

The only SATISFACTORY method of DUPLICATING TYPEWRITING; all copies are perfect *facsimiles* equal to *Photographs*, unlimited in number, printed in any colored printers' ink, at bare cost of paper; also copies drawings, handwriting, etc., equally as well. Send for specimens and circulars, *free.* Address,

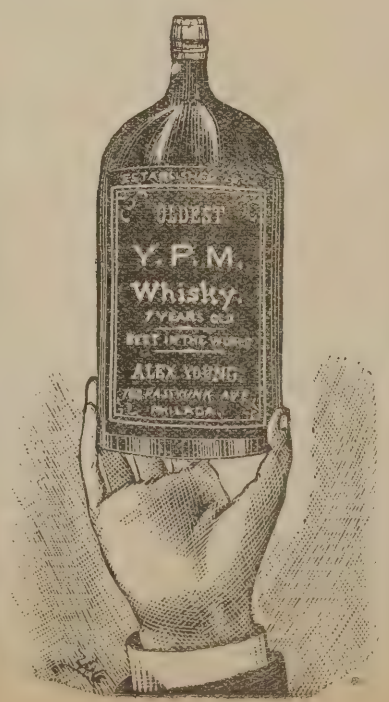
THE AMERICAN NOVELTY CO.,

S. W. Corner Clark and Monroe Sts., Chicago, Ill.

LIFE INSURANCE AT ACTUAL COST.

Persons desirous of obtaining life insurance at actual cost, should write for circulars to the SECURITY MUTUAL BENEFIT SOCIETY, No. 233 Broadway, New York.

This Society claims that since its organization, the cost to a member of middle age has been *less than twelve dollars a year* for each thousand dollars of insurance.



ESTABLISHED 1823.

ALEX. YOUNG CO., Limited.

DISTILLERS OF

Y. P. M. WHISKIES

DISTILLERY,

Nos. 408, 410, 412 and 414 South Street

MALT HOUSE,

416, 418, 420, 422 and 424 South Street,

STORE,

No. 700 Passyunk Avenue.

PHILADELPHIA, PA.

J. HENRY HENTZ. J. P. ROBINETT. J. HENRY HENTZ, Jr.

ESTABLISHED 1793.

WHITE, HENTZ & CO.,

SOLE PROPRIETORS OF

Trimble and Pennsylvania Monogram Whiskies.

222 and 224 NORTH SECOND ST., PHILADELPHIA.

D. LIEBER, 17 South William St., New York. Col. H. A. SELIGSON, 1200 Pennsylvania Ave., Washington, D. C.



KING'S

Quick Rising Flour

—AND—

CEREAL FOODS

Are Pure and Wholesome.



King's Quick Rising Buckwheat Flour.
King's Quick Rising Winter Wheat Flour.
King's Quick Rising Graham Flour.
King's Quick Rising Brown Bread Flour.
King's Partly Cooked Rolled Oats.
King's Irish Oatmeal. King's Partly Cooked Rolled Wheat.
King's Cracked Wheat. King's Steel Cut Oatmeal.
King's White Hominy.
King's Corn Grits or Samp.
King's Golden Corn Meal.
King's Silver Meal.
King's Farina.

If you cannot get these Goods of your dealer, order direct from us.

KING & LAMB, Manufacturers,

14 Fifth Avenue, CHICAGO, ILL.

For Sale in New York by H HAHNENFELD, 540 and 767 Third Ave., and 877 Fourth Ave.

HAND SEWED SHOES.

MYERS & BARRY.

HAND SEWED SHOES, ... $3 50
TO ORDER, ... $4 00

All grades of French Calf constantly on hand.
123 Roosevelt St. (near the Ferry),
New York.

UNCOVERED. We will print your name and address in American Agents' Directory, for only 12 cents in postage stamps; you will then receive great numbers of pictures, cards, catalogues, books, sample works of art, circulars, magazines, papers, general samples, etc., etc. UNCOVERING to you the great broad field of the great employment and agency business. Those whose names are in this Directory often receive that which if purchased, would cost $20 or $30 cash. Thousands of men and women make large sums of money in the agency business. Tens of millions of dollars worth of goods are yearly sold through agents. This Directory is sought and used by the leading publishers, booksellers, novelty dealers, inventors and manufacturers of the United States and Europe. It is regarded as the standard Agents' Directory of the world and is relied upon: a harvest awaits all whose names appear in it. Those whose names are in it will keep posted on all the new money making things that come out, while literature will flow to them in a steady stream. The great bargains of the most reliable firms will be put before all. Agents make money in their own localities. Agents make money traveling all around. Some agents make over ten thousand dollars a year. All depends on what the agent has to sell. Few there are who know all about the business of those who employ agents: those who have this information make big money easily; those whose names are in this Directory get this information FREE and complete. This Directory is used by all first-class firms, all over the world, who employ agents. Over 1,000 such firms use it. Your name in this directory will bring you in great information and large value; thousands will through it be led to profitable work, and FORTUNE. Reader, the very best small investment you can make, is to have your name and address printed in this directory.
Address, AMERICAN AGENTS' DIRECTORY, Augusta, Maine.

PETROLINA

Named Petrolatum by the Pharmacopœia.

—Non-oxidizable, Unchangeable, Affected by neither Time nor Temperature.—

COLOR LIGHT STRAW; MELTING POINT, 115° F. TRADE SUPPLIED BY JOBBERS.

PLAIN,
POMADE,
SCALPENE,
CARBOLATED,
CAMPHORATED,
ARNICATED,
COLD CREAM,
CAMPHOR ICE, COSMETIC,
PETROLINA OIL,
HOOF OINTMENT,
VETERINARY.



ALWAYS PURE,
SWEET,
NEUTRAL—
AND
—UNIFORM.

For Medicinal, Pharmaceutical and Toilet Purposes there is nothing on the market as good, as pure, or as handsomely and conveniently packed as

PETROLINA.

Please remember that an article suitable for the most delicate pharmaceutical preparations can not be made as cheaply as "axle grease;" that there are Petroleum Jellies and Petroleum Jellies, and that **PETROLINA** heads the list in all that pertains to a perfect article.
Order the goods, either in bulk or preparations, of your wholesale druggist. If he does not have them, write to our office.

THE BINGHAMTON OIL REFINING CO.

New York Office, 80 Cortlandt Street BINGHAMTON, N. Y.

GORDON & DILWORTH

MANUFACTURING PURVEYORS

Established 1847

ALIMENTARY PRODUCTS

ALL OF OUR PRODUCTIONS BEAR THIS TRADE MARK

WE WILL PROSECUTE ALL INFRINGEMENTS & IMITATIONS







CHOICE DESSERTS

OVER 100 DOMESTIC & FOREIGN FRUITS AND VEGETABLES TRANSMUTED INTO TABLE DELICACIES

PRICES ON PRESERVED FRUITS REDUCED 1ST DEC. 1885

PRESERVED, CANNED & BRANDY FRUITS, FRUIT JELLIES, VEGETABLES, TOMATO CATSUP, SYRUPS & JAMS, SALAD DRESSING, BLACKBERRY BRANDY, MINCE MEAT, PLUM PUDDING, SWEET PICKLES, OLIVES & CAPERS, WINE JELLIES, MARMALADE, SOUPS SAUCES &c.

SOLD BY THE LEADING GROCERS ON THE AMERICAN CONTINENT.

SCOTT'S EMULSION

OF **PURE COD LIVER OIL** WITH

HYPOPHOSPHITES OF LIME AND SODA.

THE STANDARD EMULSION OF COD LIVER OIL THROUGHOUT THE WORLD.

A BEAUTIFUL CREAMY MIXTURE—ALMOST AS PALATABLE AS MILK.

Having much greater remedial power than the crude Cod Liver Oil, without any of its nauseating effects.

Its PALATABLENESS, EASE OF DIGESTION, and long tolerance by most sensitive stomachs as well as its reliable therapeutic effect, has given it special favor with the medical Profession, and receives their unqualified endorsement and support.

Possessing as it does the tonic and stimulating properties of the Hypophosphites in combination with the strengthening and fattening qualities of the Cod Liver Oil—gives it a remedial value in WASTING DISEASES, ANÆMIA or IMPOVERISHED BLOOD, EMACIATION and CONSUMPTION—unequalled by any single or combined remedy in existence. The rapidity with which delicate children fatten and grow strong on this palatable Emulsion, is very remarkable.

Samples will be sent free except express charges to any wishing to try this preparation. For sale by all druggists.

SCOTT & BOWNE, New York.

FULL WEIGHT
PURE

DR. PRICE'S CREAM BAKING POWDER

MOST PERFECT MADE

Its superior excellence proven in millions of homes for more than a quarter of a century. It is used by the United States Government. Endorsed by the heads of the Great Universities as the Strongest, Purest, and most Healthful. Dr. Price's the only Baking Powder that does not contain Ammonia, Lime or Alum. Sold only in cans.

PRICE BAKING POWDER CO.
NEW YORK. CHICAGO, ST. LOUIS.

RHEUMATISM

is a blood disease and *Corey's Mexican Remedy a positive cure.* Purely vegetable. Not a case of failure known. So strong is our faith, we will send one bottle to any sufferer *free.* Address

THE IDEAL MEDICINE CO., 19 Park Place, New York City.



BLAIR'S PILLS

Great English Remedy for Gout, Rheumatism and Kidney Complaints.

Sure, Prompt and Effective. Oval box 34, round box 14 pills. At all druggists, and 224 William St., New York.

GOLD You can live at home and make more money at work for us than at anything else in the world. Either sex; all ages. Costly outfit FREE. Terms FREE. Address, TRUE & CO., Augusta, Maine.



These Goods are "Par Excellence,"

Pure, Healthful and Reliable, warranted to give satisfaction in every particular. For sale by wholesale and retail grocers throughout the United States. VOUWIE BROS., Manufacturers, CLEVELAND and CHICAGO.

PURITY AGE STRENGTH

The "Best" Tonic

A Concentrated Liquid Extract

OF

MALT AND HOPS.

Invigorating

and

Nutritious.



INSURES

A

Healthy Appetite

—AND—

AIDS DIGESTION.

STRENGTHENS THE SYSTEM.

One of the Most Efficacious Remedies for Dyspepsia.

INDISPENSABLE FOR NURSING MOTHERS. THE MOST WHOLESOME TABLE BEVERAGE.

The "BEST" Tonic is manufactured from the Best Malt and Choicest Hops and neither Alcohol, Spirits nor Chemicals of any kind are used in its preparation.

MANUFACTURED ONLY BY

Specialty Department, **PHILLIP BEST BREWING CO.,**

Eastern Depot, 28 College Place, N. Y.

General Office, - - - - MILWAUKEE, WIS.

CUM HOC SIGNO 

COGNITUS EST

LIQUID
PANCREOPEPSINE

(WARNER'S DIGESTIVE FLUID.)

FOR THE CURE OF

DYSPEPSIA AND MALARIA

This preparation contains in an agreeable form the natural and assimilative principles of the digestive fluids of the stomach and duodenum, comprising **Pancreatine, Pepsin, Lactic and Muriatic Acids.** The best means of re-establishing digestion in enfeebled stomachs, where the power to assimilate and digest food is impaired, is to administer principles capable of communicating the elements necessary to convert food into nutriment.

It is usually given in doses of from one to two tablespoonfuls after each meal, with a small proportion of water or wine, or alone, as it is very pleasant and agreeable to the taste.

Put up in Sixteen-ounce French Square bottles, for Physician's prescriptions, and druggists can attach a label with doctor's directions.

WILLIAM R. WARNER & CO.,

1228 Market Street, Philadelphia.

22 Liberty Street, New York.

SUPPLIED BY ALL DRUGGISTS.

Humorous Column, Edited by S. W. Foss, the well-known contributor to all leading American Humorous Publications.

150,000 READERS EVERY WEEK

Fancy Work Department, Edited by EVA M. NILES, the leading American authority on Fancy Needle Work Designs.

THE YANKEE BLADE

Is now in its forty-seventh year, and is unquestionably the Largest, Brightest, Handsomest and Cheapest Weekly Family Story Paper in America. The publishers of THE YANKEE BLADE are aiming for THE LARGEST CIRCULATION IN AMERICA. With this object in view they make a special offer to new subscribers Send a trial subscription, and be prepared to know what paper to order for the coming year. All who subscribe at once will receive THE YANKEE BLADE 5 weeks for 10 cents; 13 weeks for 25 cents; six months for 50 cents; one year, $1; two years, $1.75. A SUBSCRIPTION FREE for EVERY CLUB OF FOUR NEW SUBSCRIBERS. Don't misunderstand our offer. The regular subscription price of THE YANKEE BLADE is $2, but to introduce our paper everywhere it will be sent ON TRIAL during the continuance of this offer for the special prices named above. THE YANKEE BLADE can be procured through any newsdealer at 5 cents a copy. Remittances should be made in Money Orders, Express Orders, or Registered Letter at our risk. Postal Notes are no safer than bills. Stamps taken (one cent preferred) when more convenient. All Postmasters are required to register letters when requested. Address,

5 WEEKS —FOR— 10 CENTS

The POPULAR AMERICAN WEEKLY.

THE YANKEE BLADE, One Subscription Free for Every Club of Four New Subscribers, And $4. ON TRIAL, ONE YEAR.

13 WEEKS —FOR— 25 CENTS

POTTER & POTTER, Pubs,
43 MILK STREET, Boston, Mass.

Household Department, Edited by TREBOR OHL. Containing only authorized reports of the Boston Cooking School.

Fascinating Stories Of Adventure and Travel for Men. Stories of Love and the Family Fireside for the Ladies.

FAT **CORPUS LEAN** *will reduce fat at the rate of 10 to 15lbs. per month without affecting the general health. 6c. in stamps for circulars covering testimonials.* S. E. MARSH CO., 2315 *Madison Sq., Philadelphia, Pa.*

MADE **ABSOLUTELY HARMLESS** *simply stopping the FAT-producing effects of food. The supply being stopped the natural working of the system draws on the fat and at once reduces weight.* LEAN

ESTABLISHED 1857.

J. H. CUTTER,

OLD

BOURBON AND RYE WHISKIES.

We are the Sole Owners and Proprietors of this Celebrated Brand of Whiskey.

C.P.MOORMAN & CO. **LOUISVILLE, KY.**

We Guarantee the Superior Quality and Absolute Purity of every Barrel of Whiskey sold by us under this Brand.

W. P. FESSENDEN, Agent for N. E. States, Maryland and Penn., 11 Central St., Boston.

THE OLDEST.

THE GENUINE EAU DE BOTOT BOTOT WATER
THE ONLY DENTIFRICE APPROVED BY THE ACADEMY OF MEDICINE OF PARIS, FRANCE.



FOR MORE THAN A CENTURY IN GENERAL USE IN EUROPE.
SOLE AGENT FOR THE UNITED STATES, FREDERIC REISET, 44 BEAVER STREET, NEW YORK.

THE BEST.

SEND YOUR WIFE THE

American Analyst.

$1.00 A YEAR.

CURE FOR THE DEAF

PECK'S PATENT IMPROVED CUSHIONED EAR DRUMS **Perfectly Restore the Hearing,** and perform the work of the natural drum. Invisible, comfortable and always in position. All conversation and even whispers heard distinctly. Send for illustrated book with testimonials **FREE.** Address or call on

F. HISCOX, 853 Broadway, N. Y.

Mention this Journal.

ESTERBROOK'S STEEL PENS

Leading Numbers



14,048,128
130, 135,
333, 161.

For sale by all stationers.

THE ESTERBROOK STEEL PEN CO., 26 John St., N. Y.
WORKS: CAMDEN, N. J.

THE FINE COFFEES

ROASTED AND SOLD

BY THE

Schnull-Krag Coffee Co.

are shown by analysis and test, to be equal to any Coffees produced in America. By the superior process of roasting and blending, which is a well guarded secret of the proprietors, they have been able in a short time to place their goods in all the States of the West and North-West; and while it may seem like carrying coals to Newcastle to ship these goods to the markets east of us, yet as they are packed in patent air tight cans, thus preserving the aroma as well as avoiding contamination of the goods with the impure atmosphere, it is not only safe, but in all respects practicable to ship to all points east or west without the risk of having the goods depreciated in transportation. To dealers who are desirous of testing these coffees, they can have them sent on trial, and if at the expiration of sixty days they are not entirely satisfactory, they may be returned at our expense. This coffee is packed in 50 lb. air tight cans. For price list and descriptive circulars, address the Company.

THE SCHNULL-KRAG COFFEE COMPANY,

INDIANAPOLIS, IND.

Tabasco Pepper Sauce

OR LIQUID PEPPER.

Is simply the Pulp of the Ripe Pepper Extracted by Pressure.

The seed of this Pepper was obtained from Central America, and by careful cultivation in Louisiana for many years has been so improved in strength, flavor and aroma, as to have become a new variety of Red Pepper, superior to all others. The pulp is so handled as to retain all the flavor, strength, aroma and color of the ripe fruit, and to keep unimpaired in any climate. It excites the appetite, promotes digestion, and is pronounced, by connoisseurs, to be the finest condiment in the world. For medicinal purposes it recommends itself by its purity, strength and diffusible form.

Manufactured by E. McILHENNY,

NEW IBERIA, LA.

For Sale by all Wholesale Grocers.

SWIFT'S

Choice Chicago Dressed Beef

—AND—

MUTTON.

CAN be found at all times in full supply and at popular prices at the branch houses in all the larger cities and is ***retailed by all first class butchers.***

The trade of all marketmen and meat dealers is solicited for our Wholesale Branch Houses, and the ***public may rest assured*** *that in purchasing our* ***meat*** *from dealers they will* ***always receive the best.***

SWIFT AND COMPANY,

UNION STOCK YARDS,

CHICAGO, ILLS.

PEACOCK'S BROMIDES

(SYR: BROM: COMP: PEACOCK)

NERVE SEDATIVE.

Each fluid drachm represents 15 grains of the Combined C. P. Bromides of Potassium, Sodium, Calcium, Ammonium and Lithium.

USES:—EPILEPSY, and all CONCESTIVE, CONVULSIVE, and REFLEX NEUROSES.

This preparation has stood the test of time and experience, and can be relied upon to produce results, which can not be obtained from the use of commercial bromide substitutes.

DOSE:—One to two FLUID drachms, in WATER, three or more times a day.

PEACOCK CHEMICAL CO., St. Louis.

A POTENT REMEDY

—)FOR(—

INDIGESTION, ACUTE AND ATONIC DYSPEPSIA, CHRONIC AND GASTRO-INTESTINAL CATARRH, VOMITING IN PREGNANCY, CHOLERA INFANTUM, AND IN CONVALESCENCE FROM ACUTE DISEASES.

Over **5,000** Physicians have sent to us the most FLATTERING OPINIONS upon DIGESTYLIN, as a REMEDY for all diseases arising from improper digestion.

For 20 years we have manufactured the DIGESTIVE FERMENTS expressly for Physicians' use, and for the past year **DIGESTYLIN** has been by them extensively prescribed, and to-day it stands without a rival as a digestive agent.

KIDDER'S

DIGESTYLIN

FOR

INDIGESTION & DYSPEPSIA

It is not a secret remedy, but a scientific preparation, the formula of which is plainly printed on each bottle. Its great DIGESTIVE POWER is created by a careful and proper treatment of the ferments in manufacture. It is very agreeable to the taste, and acceptable to the most delicate stomach. For the reliability of our statements, we would respectfully refer to the WHOLESALE and RETAIL DRUGGISTS of the country, and PHYSICIANS generally. Sold by Druggists, or

WM. F. KIDDER & CO.,

PRICE, $1.00. **83 John Street. New York.**

ON THE USE OF PURGATIVES.

BY CHARLES A. HOFF, M. D., ST. LOUIS, MO.

Of all preparations contained within the *pharmacopœia,* there are none, apparently, held in higher esteem by mankind than that class of medicines, commonly known as purgatives. The busy practitioner confidently prescribes them with variable frequency, singly and combined, from the date of the writing of his very first prescription to that of his last; and the corner druggist rarely sees a day pass over his head on which he does not greet the customer who has called around to get "something to act upon his bowels." Indeed, the inevitable purgative awaits the tiny baby screaming in its first attack of colic; it is resorted to by the invalid weighted down with years of suffering and disease; and it is by no means despised by the individual in robust health, when assailed by the various petty ills, which even the most vigorous seldom entirely escape.

Notwithstanding the fact that purgatives are so generally prescribed by the physician, and so frequently resorted to without advice by the patient, they are not altogether incapable of doing harm. As everybody knows, the habit of purging the system repeatedly with salines, cholagogues, hydragogues, or drastics, is a most pernicious one; and the physician who fails to exercise a proper care, both in the selection and the administration of cathartics will sooner or later bankrupt the health of his patients as well as his own hard earned reputation.

Constipation is a complication of so many disorders, a symptom of so many diseases that its treatment in different cases depends upon very different considerations. For a simple, ordinary attack, the average doctor has been accustomed to use a simple purge, such as castor oil, sulphate of magnesia, rhubarb, senna, aloes, colocynth, blue pills, etc.; yet in none of these, can it be truly said, has there been found all that could be wished for, even in so simple a matter as a laxative. Where can we find the physician who has not been vexed and annoyed at the complaints of his patients against the purgative medicines he has been accustomed to prescribe. Some people there are who can not or will not swallow pills; many object to the nauseating castor oil; not a few oppose the use of salines since they are disagreeable both in taste and effect; many look upon all resinous cathartics as objectionable on account of their so called heating properties; aloes is objected to in pills and especially in pregnancy; elaterium is said to be excessively harsh and severe, croton oil is known to be dangerous; podophyllin causes an undue amount of griping; blue mass is avoided on general principles; and so on to the end of the chapter.

Fortunately, however, the physician of the present need no longer be placed in a dilemma when called upon to prescribe a preparation free from the faults enumerated in connection with ordinary purgatives. The pharmacist has bravely come to his aid with a formula of incomparable excellence; and this preparation, a combination of "manna, purified cathartic acid and fruit juice," although but recently brought to the notice of the medical world, is, nevertheless, already regarded as a most valuable addition to the resources of medicine.

The happy thought that suggested the combination known as the Rio Chemical Co.'s Acid Mannate justly challenges unlimited admiration and esteem, and has thus far evoked from the profession an almost universal verdict of commendation and praise. Prompt, mild and certain in its action, Acid Mannate may well be considered an ideal remedy in the constipation of pregnancy. Being pleasant to the taste, and continuing its good work without increased dosage, it is pre-eminently adapted to cases of habitual constipation. Indeed, in its wide range of adaptability as an aperient medicine it is impossible to exaggerate its importance, or allude either directly or indirectly to the vast variety of its beneficial, therapeutical properties.

The importance of laxatives is probably nowhere appreciated so much as in the constipation of pregnancy; and it is to this fact, no doubt, more than to any other, that Acid Mannate owes its great popularity and fame among remedial agents. The testimony of thousands of honorable medical gentlemen leading us to believe that, through the beneficent effect of this same elegant formula, constipation need not hereafter, as in the past, be regarded as one of the most troublesome attendants upon gestation. Moreover, the atrocious female pill of unknown composition but of dire effect, which has deluded the drug market for ages, we may consider as having had its day; and it is to be hoped that, since the physician is now in possession of a purgative especially suited to the period of gestation, female life will be less frequently harassed by the ails and aches said to be peculiar to the sex; and that miscarriages, displacements, granular erosions, congestions, headaches, dyspeptic and hypochondriacal attacks, and the whole long train of aches, pains and nervous ills will grow less familiar to the medical profession in the same ratio that the physician increases his familiarity with the actions of Acid Mannate.

A full sized bottle of Acid Mannate will be sent free to any Physician who desires to test it, if he will pay the express charges and mention this Journal, on application to the

RIO CHEMICAL CO.,
St. Louis, Mo

ESTABLISHED 1835.

CORNWALL & BROTHER

—) FINE (—

Milled, Toilet and Laundry

SOAPS AND CANDLES,

LOUISVILLE.

CARNRICK'S SOLUBLE FOOD

FOR INFANTS AND CHILDREN.
For Mothers, Invalids, Dyspeptics & Aged People.



THE ONLY FOOD *that digests as easily as human milk, and agrees with all infants and children.*
THE ONLY FOOD *that thoroughly nourishes the child without the addition of cow's milk.*
THE ONLY FOOD *that removes from infancy all necessity, danger and annoyance of a wet nurse.*
TAKEN BY MOTHERS *once or twice a day the quantity of milk will be increased and quality at once improved.*

IF THE CHILD IS RESTLESS, *change partially from nursing to* **SOLUBLE FOOD.**

DR. STUTZER, Food Analyst for Rhenish Prussia, says: "CARNRICK'S SOLUBLE FOOD is the best of all the foods I have ever examined."

"OUR BABY'S FIRST AND SECOND YEARS," by Marion Harland. Book of 64 pages, giving careful instructions for bringing up the little ones. Sent free by
REED & CARNRICK, N. Y.

ARMOUR & CO.

CHICAGO, ILLS.

PACKERS OF

Pork and Beef Products

CANNED MEATS,

ETC.,

FOR HOME CONSUMPTION AND FOR EXPORT

TO ALL PARTS OF THE WORLD.

Also,

SHIPPERS OF

Choice Dressed Beef,

MUTTON AND HOGS,

In Refrigerator Cars,

To BOSTON,
NEW YORK,
PHILADELPHIA,
BALTIMORE,

And other cities throughout the country.

NATRONA BI-CARBONATE OF SODA.

(ABSOLUTELY PURE.)

NATRONA



TRADE MARK

SODA

The nature of the raw material from which NATRONA BI-CARBONATE OF SODA is made—viz., kryolith, a mineral containing *pure sodium*—insures a purity and uniformity of product which cannot be obtained from any other known material. In making BI-CARB. SODA from any other raw material, the use of sulphuric acid is a necessity, but none is used in any part of the process of making NATRONA BI-CARB.; hence its entire freedom from the slightest trace of arsenic, which is always present in ordinary soda. Its absolute purity and entire freedom from all traces of *sulphate of soda*, common salt and other impurities, render NATRONA BI-CARB. NEARLY TASTELESS, and being bolted through the finest bolting-cloth, insures the finest stage of division.

To these indisputable facts the attention of CONSUMERS of soda is specially called. They are IMPORTANT, and should influence both those who use and those who sell soda, to buy and sell NONE BUT THE BEST.

The NATRONA BI-CARB. Soda is kept in stock by almost every wholesale druggist and grocer throughout the United States, of whom it may be ordered.

Natrona Bi-Carb. Soda is unequaled by any other brand of English or American Manufacture.

PENNA. SALT MANUFACTURING CO.,
NATRONA CHEMICAL WORKS. PHILADELPHIA, PA.

Established in London, 1831.

DEAN'S PATENT

ARDENTER MUSTARD.

BEST IN THE WORLD.

WARRANTED ABSOLUTELY PURE.



WARRANTED ABSOLUTELY PURE.

Ardenter Mustard Pellets

— FOR —

Dyspepsia and Indigestion.

UNIVERSALLY recommended and prescribed by physicians. The medicinal property are English mustard seed coated with pepsin and sugar. You will find it will relieve you after using two or three doses. It is very beneficial for Heartburn, Sour Stomach and Headache. They are a beautiful confection for children. Each bottle contains full directions.

W. G. DEAN & SON,

361 and 363 Washington Street, 84, 86 and 88 North Moore Street, New York.

Sura Cura

ROBINSON'S SURE CURE FOR

RHEUMATISM

And NEURALGIA,

And remedy for diseases arising from an impure state of the blood. An antidote for **MALARIA.** Price 50 c. and $1. Sent by mail on receipt of price. Send for Circular.

R. W. ROBINSON & SON,
184 Greenwich Street,
NEW YORK.

Sura Cura



GOLD MEDAL, PARIS, 18[illegible]

BAKER'S

Breakfast Cocoa.

Warranted ***absolutely pure Cocoa,*** from which the excess of Oil has been removed. It has *three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup.* It is delicious, nourishing, strengthening, easily digested, and admirably adapted for invalids as well as for persons in health.

Sold by Grocers everywhere.

W. BAKER & CO., Dorchester, Mass.

A. H. WIRZ,

MANUFACTURER OF

Bottle Stoppers

— AND —

COLLAPSIBLE TUBES,



No. 740.



Collapsible Tubes.



Nos. 92, 93, 94.

—AND ALL KINDS OF—

Metal Goods

913-917 CHERRY STREET,
PHILADELPHIA, PA.

A VALUABLE BOOK FOR NOTHING.

The AMERICAN ANALYST will send to any person who will forward a New Subscription with One Dollar, a copy of

THE FAMILY CYCLOPÆDIA OF USEFUL KNOWLEDGE.



This is unquestionably one of the most interesting, entertaining and instructive books ever published. It is a universal educator for every member of the family circle, filled with useful information from beginning to end, and this information is given in such an attractive and pleasing way that the book is quite as entertaining as it is instructive. It treats of hundreds of subjects of which no man, woman or child who seeks to be well informed can afford to be ignorant, yet of which the masses of people are entirely unlearned. It contains the cream or substance of a dozen ordinary volumes, and is one of the most valuable and useful books a family can have in the house. No living man is so well informed that he may not learn from it. It is a book for the masses, for old and young, rich and poor, and will be read with pleasure and profit by all. It will likewise be found of great value as a work of reference. The book is profusely and elegantly illustrated, and is conveniently divided into departments, as follows: **Biography, History, Natural History, Travels, Manners and Customs, Etc.; The World Illustrated, Useful Arts and Manufactures, Trees, Plants, Fruits, Etc.; Great Inventions, Mining, Wonders of the Sea, Familiar Science, Law for the Masses, Statistical and Miscellaneous.** All the above subjects are fully and ably treated in this valuable book. It is a vast storehouse of useful and entertaining knowledge—unquestionably one of the best and most valuable books ever published in any land or language. No cyclopædia ever heretofore published at twice the cost is to be compared with this book in point of artistic make-up, beauty, and excellence of illustration, and quality of contents. As a holiday or birthday present for any one, nothing more appropriate or acceptable could possibly be selected. THE FAMILY CYCLOPÆDIA OF USEFUL KNOWLEDGE is a large and handsome book of 544 pages, 12mo, printed upon fine paper and elegantly bound in cloth, embellished with artistic designs in black and gold. It contains **Two Hundred and Seventy-three Beautiful Illustrations,** the original cost of which was over $5,000. The book will be sent by mail, post-paid, to any person sending a **New Subscription with One Dollar.** It is as large and handsomely gotten up as books usually sold at $1.50 and $2.00, and in the quality of its contents is worth a dozen ordinary volumes.

ADDRESS ANALYST PUBLISHING CO.,

19 PARK PLACE, NEW YORK.

QUINA-LAROCHE

A STIMULATING, RESTORATIVE AND ANTI-FEBRILE

VINOUS ELIXIR

OF THE THREE CINCHONA BARKS.

A most powerful restorative in all cases where Cinchona is indicated,

As MALARIA, EXHAUSTION, SLOW CONVALESCENCE, GENERAL DEBILITY, Etc.

LAROCHE'S QUINA possesses in the highest degree the restorative and invigorating qualities of Cinchona, which is the best known medicine for giving tone to the digestive organs. It succeeds completely in removing LANGUOR, WEAKNESS, WASTING DISEASES, WANT OF APPETITE, and for FEVER AND AGUE IT IS ONE OF THE BEST SPECIFICS.

FOR SALE BY ALL DRUGGISTS.

E. FOUGERA & CO.,

PARIS, 22 RUE DROUOT. Sole Agents for the United States.

American Analyst,

Published on the 1st and 15th of each month,

At 19 PARK PLACE, NEW YORK.

EUROPEAN AGENCIES.

On file at "American Exchange," 449 Strand, London; and American Exchange," 35 Boulevard Des Capucines, Paris.

F. W. DEVOE & CO.,

ESTABLISHED 1852.

PURE MIXED PAINTS

WE desire to call attention of consumers to the fact that we guarantee our ready-mixed paints to be made only of pure linseed oil and the most permanent pigments. They are not "Chemical," "Rubber," "Patent," or "Fireproof." We use no secret or patent method in manufacturing them by which benzine and water are made to serve the purpose of pure linseed oil. Sample cards containing 50 desirable shades, sent on application.

Catalogues of our different departments to responsible parties.

FINE VARNISHES, WOOD FILLERS, WOOD STAINS.

Artist's Materials. Mathematical Instruments.

Cor. Fulton and William Sts., New York.

COFFIN, DEVOE & CO.,

179 RANDOLPH STREET, CHICAGO.

IMPORTANT

TO THE

MEDICAL PROFESSION.

Send your address to THE NEW YORK PHARMACEUTICAL COMPANY, BEDFORD SPRINGS, MASS., for Illustrative Hand-book, **FREE,** containing valuable formula, special directions, and the testimonials of one thousand physicians in favor of the great merits of

HAYDEN'S

Viburnum Compound,

IN FEMALE DISEASES.

Also, the

URIC SOLVENT,

For KIDNEY DISEASES, and complaints arising therefrom.

SPECIAL PREMIUM OFFER.

For twenty-five new subscribers at $1 each, we will send a Marlin Repeating Rifle, 28-inch octagon barrel, with pistol grip, checkered stock and fore-arm; regular price of which is $26.50.

For thirty-five new subscribers at $1 each, we will send a Ballard Rifle, No. 8, Union Hill, half octagon barrel, with pistol grip, checkered stock and fore-arm, off-hand nickeled butt plate, fine target sights, etc.; regular price of which is $34.

For twelve new subscribers at $1 each, we will send a Marlin Double Action Revolver (Smith & Wesson model), full nickel plated, with rubber handle, 38 calibre; regular price of which is $11.

All of these are illustrated in the advertisement of the Marlin Fire Arms Co., on another page.

THE ANALYST PUBLISHING CO.,
19 Park Place, New York.

CORRESPONDENCE.

IVORY SOAP.

BROOKLYN, *February* 12, 1888.

Editors AMERICAN ANALYST: As you see from the enclosed certificate of Professor H. B. Cornwall, your recent attack on Procter & Gamble's Ivory Soap was as unjust as it was undeserved. The best thing you can do is to publish the enclosed certificate.

SUBSCRIBER.

[We publish with pleasure our correspondent's letter; but to publish the certificate he sends, which is an advertisement, we should have to charge regular advertising rates.—EDS.]

A DEFENDER OF PEARLINE.

BROOKLYN, *January* 14, 1888.

Editors AMERICAN ANALYST: The writer of an article on Pearline in a recent issue of your paper is guilty either of ignorance or knavery, for his remarks are slanderous. Pearline has been in constant use in my family for many years. We have yet to see any damage done by it to our hands or clothing. It does not even affect the colors, and most certainly is the greatest aid that we know of in washing and cleaning; furthermore, I have known Mr. Pyle for years, and I assure you he would not sell, much less put his name on an article such as you describe. If your chemist will analyze Pearline, he will see that the article referred to is utterly false.

SUBSCRIBER.

[We believe in giving both sides a fair chance, but this correspondent misquotes the statements heretofore made.—EDS.]

ALUM BAKING POWDERS.

The daily papers have contained a great many articles lately, giving prominence to a decision of a court in St. Lawrence County, New York, as it was asserted, to the effect that alum was a most dangerous adulteration. The wide dissemination given to this decision, far in excess of the brief mention newspapers generally award to such things, created a suspicion that there must be a colored citizen in the fence somewhere, and, as usual, we find it is one of the customary advertising dodges of the would-be only pure baking powder monopolists, as can be plainly seen from the following letter:

COUNTY CLERK'S OFFICE,
ST. LAWRENCE COUNTY,
CANTON, N. Y., *January* 13, 1888.

Editors AMERICAN ANALYST:

Yours of the 11th inst. received. Moore & Averell were tried at the Sessions, in this county, in December last, upon an indictment charging them with selling as "Royal Baking Powder," a substance which was not "Royal Baking Powder," but a cheaper and inferior substance, and a substance in which cream of tartar, one of the component parts of "Royal Baking Powder," was wanting, and alum, an inferior and cheaper substance, substituted therefor.

At the trial, evidence was introduced showing that Moore & Averell did sell to one Lassell, a baking powder known as "Gillett's," commonly sold in bulk and containing alum, for "The Royal Baking Powder." That Lassell called for the genuine Royal Baking Powder, holding in his hand a printed advertisement of that powder, and was given and paid for a package of Gillett's powder, in a wrapper without label, and assured that the substance was "The Royal Baking Powder."

Defendants were convicted.

Very truly yours,

FRANK N. CLEAVELAND,
Dep. Clerk.

The Standard of Excellence.

KINGSFORD'S

OSWEGO

Pure and Silver Gloss



STARCH

KINGSFORD'S

OSWEGO CORN STARCH

FOR

Puddings, Custards, Blanc-Mange, Etc.

THE PERFECTION OF QUALITY.

WILL PLEASE YOU EVERY TIME.

Always ask your Grocer for these goods.

COLDEN'S LIQUID BEEF TONIC

ORIGINAL LABEL:
"Colden's Liebig's Liquid Extract of Beef and Tonic Invigorator."

AN INVALUABLE AID IN THE TREATMENT OF ALL CASES OF DEBILITY.

Established 15 Years. Endorsed by Scores of Physicians. Essentially Different from all other Beef Tonics. Beware of Imitations.

COLDEN'S LIQUID BEEF TONIC consists of the Extract of Beef (by Baron Liebig's process), spirit rendered non-injurious to the most delicate stomach by extraction of Fusel Oil, soluble Citrate of Iron, Cinchona, Gentian and simple aromatics. An official analysis of this preparation by the eminent chemist ARTHUR HILL HASSALL, M. D., F. R. S., and an endorsement by SIR ERASMUS WILSON, F. R. S., is printed on the label of each bottle.

Its Range of Action Embraces all Cases of Debility.

By the urgent request of several eminent members of the medical profession, I have added to each wineglassful of this preparation two grains of SOLUBLE CITRATE OF IRON, and which is designated on the label as "No. 1," while the same preparation, without Iron, is designated on the label as "No 2."

It acts directly on the sentient gastric nerves, stimulating the follicles to secretion and gives to weakened individuals that first pre-requisite to an improvement, an appetite.

☞ *I will, upon application, send a sample bottle of Colden's Liquid Beef Tonic to any physician in regular standing. Please ask your Dispensing Druggist (if he has not already a supply) to order it. In prescribing this preparation physicians should be particular to mention "COLDEN'S" viz: "EXT. CARNIS. FL. COMP. (COLDEN). It is put up in pint bottles and can be had of Wholesale and Retail Druggists generally throughout the United States.*

C. N. CRITTENTON, Sole Agent,
115 Fulton Street, N. Y.

Please Mention the AMERICAN ANALYST.

WEATHER MEASURERS.

THE DELICATE INSTRUMENTS USED BY THE SIGNAL SERVICE.

On the top floor of a big building at the corner of Broadway and Ninth Street is the office and factory of the man who makes all the scientific instruments for the Signal Service and for the hydrographic and meteorological and geographic survey services, and Uncle Sam's navy also. The proprietor is a quiet little man, who talks slowly, as though a sudden word might injure the mechanism of some of the ingenious and delicately contrived instruments which surround him; but what he doesn't know about all kinds of "ometers" isn't to be found in many of the cyclopœdias. When asked last week if there were any new developments or improvements in the line of signal service instruments, which would add to the efficiency of their system, he said:

"No, there is nothing new that would be of any public interest. What improvements there have been in recent years are only in minor detail that wouldn't interest any one but a scientist."

Yet there were a good many odd and wonderful looking machines about the office, and an explanation of them was readily given.

"How many instruments comprise the outfit of a signal service station?"

"Chiefly a barometer, thermometer, maximum and minimum thermometer, wet and dry bulb hygrometer, anemometer, wind vane and rain gauge. Every station has also a spare barometer, in case of accident."

"The present style of barometer is the outgrowth of the differential water thermometer, twenty-eight or thirty feet long, first put to practical use by the Florentine Academy. Our improved standard barometer for observers of the first class is a slightly complex machine in its details, and was originally gotten up by the Smithsonian Institute. The ordinary marine thermometer in use thirty years ago is as good for its purpose as any made to-day. None of these instruments can be said to be perfect, but they are the best to be had so far. Barometers cost from $34 to $170 each, according to the style.

"Thermometers have been perfected to a scale of tenths of degrees. It is one of the oldest of scientific instruments, and there have probably been more cheap instruments of this kind made and sold than of any other. The basis of the idea was the old air thermometer, which was impracticable because incapable of being transported. Air expands equally; mercury does not. One kind of glass will give different indications from another kind, as glass itself expands. Hence there are a great many things that have to be considered in the manufacture of a reliable thermometer. In graduating the scale, we take two standard points, that of the melting point of ice, which we call 32° Fahrenheit, and that of the boiling point of water, 212°. When it gets below freezing point, cheap thermometers are apt to be unreliable, because it wouldn't pay to have their scales accurately graduated. Draper's self-recording thermometer, now in frequent use, is of the same class, and it is additionally defective in being a metallic thermometer. It is a pretty thing to look at, and will register fairly within a few degrees for ordinary temperatures, but does not act promptly enough, and could never be perfected. The bi-metallic principle cannot compare with alcohol even for reliability, and it is only used for extreme cold, as mercury is the most sensitive material to be found; but it will freeze up at 40° below zero. The only thoroughly reliable process of keeping a continuous record of thermometrical readings is by the system of a series of photographs of the thermometer, and that device has not yet been made anything like automatic. The principle of our maximum thermometer is about perfect. A short distance above the bulb the tube is contracted, and through this neck, as the mercury below expands with the heat, it passes up in small pulses or globules, but will not return owing to the cohesive force of the augmented mass above. Thus, the warmer it gets, the higher the mercury rises, and stays there until it is shaken down. The minimum thermometer has a little black pin in the tube which slides down with the mercury or alcohol as low as it goes, but is too heavy to be taken up again with it This thermometer is always kept on its side, almost horizontal, and the pin can be put to the top again with a shake. Thermometers cost up to $25—all prices.

"The hygrometer, for measuring the humidity of the atmosphere, was invented by Professor Sykes, of Cambridge, England, about thirty years ago. It is now used in cotton mills to artificially regulate the atmosphere to the best condition for the manufacture. That idea was first put in operation by Englishmen who took charge of cotton mills in New England, where the air is very much dryer than they had been accustomed to. It is also used by piano makers to keep the atmosphere of their drying rooms exactly right, and is used a great deal by intelligent physicians in cases of lung trouble. They cost $7.

"The anemometer, for measuring the velocity of the wind, is of two kinds: Robinson's hemispherical cup, invented by Dr. Robinson, of Scotland, who established a law that a machine of his construction would revolve at half the velocity of the wind, minus friction, and our delicate little air meter for measuring currents under thirty miles per hour, such as the draughts of chimney flues, ventilation of mines, sewers, etc. They cost $20 to $30 each.

"The standard rain gauge has a fifty square inch surface and an anti-splashing device, so as to register the precipitation as accurately as possible. The odometer, for ascertaining the number of miles traveled by a carriage, is another machine that we manufacture, but it isn't used much by the signal service.

"All these things are good or bad, according to the authority that prevails at the time. At present that happens to be the signal service, of course, and whatever instruments they choose to adopt, those are the best. We don't get any patents on our little inventions and improvements, because it wouldn't pay—the sale isn't large enough. I think it would be a great deal better in every way for the service if it was to revert to such scientific men as those of the Smithsonian Institute, who had charge of it before the signal service was established. Over seventeen years ago, when the Smithsonian Institute had it, they maintained just as efficient a service, with as many stations and civilian observers, as the army staff does to-day. There would, under a return to the old state of things, be a chance for improvement also, for scientific people will reason, but the government is full of dogmatisms and runs the business by cast iron rules. The contracts for all their supplies, too, are given to the lowest bidder, and therefore it may be that they will not in all cases secure the best. One who supplies government services will frequently do more by going to Washington and making friends than by staying at home and doing good work in the preparation of his supplies. Congress is apparently too stingy to give sufficient appropriation for the signal service to make it progress in value."—*Com. Advertiser.*

BURNETT'S
PERFECTLY PURE HIGHLY CONCENTRATED
Standard Flavoring
EXTRACTS

THE superiority of these Extracts consists in their
PERFECT PURITY AND GREAT STRENGTH.

There is no subject which should more engross attention than the purity of the preparations which are used in flavoring the various compounds prepared for the human stomach.

They are not only true to their names, but are prepared from fruits of the best quality, and so highly concentrated that a small quantity only need be used.

JOSEPH BURNETT & CO., Boston, Mass.

VEGETABLE LARD.—Cottonseed lard is coming into competition with the legitimate article to that extent that western hog raisers are raising a squeal. They want the southern product put into the same category as oleomargarine, and are flooding their Congressmen and the Department of Agriculture with petitions to this effect. Like all reformers, they are doing this solely "for the good of the people." They do not care for the competition, but desire to protect the consumer. Exactly what great evil is to follow the use of a clean, pure and wholesome vegetable fat is not stated, but "the public must and shall be protected."—*National Druggist.*

TAKE YOUR CHOICE.—Traveller: "What can you give me to eat?"

Native: "Mos' anything. Co'n bread an' po'k an' coffee, or po'k an' co'n bread an' coffee, or co'n bread an' coffee an' coffee an' po'k. What'll yer have?"

VICARIOUS IMMERSION.—Says the Harrodsburg (Ky.) *Democrat:* "Two brothers, not living more than fifty miles from Harrodsburg, look so much alike that when one of them joined the Baptist church and was about to be immersed he found that he had no clothes suitable for the occasion, as he expressed it, and paid his brother ten cents to be baptized in his place, which was done. This story seems incredible; but it is nevertheless the fact, and would never have been found out had not one of the brothers gotten angry and gave it away."

SULPHURIC ACID.—The petroleum refiners of the United States consume about nine million pounds of sulphuric acid per month.

ROBERT SHOEMAKER & CO.,
North-East Corner of Fourth and Race Sts., - PHILADELPHIA.
MANUFACTURERS OF
ABSOLUTELY PURE SPICES.

We grind all our spices from the best crude material, cleansing and separating each from all dirt or any foreign substance which may be found.

FLAVORING EXTRACTS FOR COOKING

purposes. These we prepare in the most careful manner from the finest material only. They are highly concentrated and of unequaled flavor.

JOHNSTON'S FLUID BEEF

Is a concentrated and unmedicated extract of the best beef, highly recommended for the instantaneous (by the addition of boiling water) production of a **Beef Tea,** superior in every way to that made by the usual tedious process. For the well or sick, PROFESSOR HARKNESS, *Analytical Chemist to the British Government,* **pronounces JOHNSTON'S FLUID BEEF "ONE of the most perfect foods I have ever examined."**

For "Bullion," "Consommé," indeed all soups, sauces, gravies, etc., it will be found admirably adapted and indispensable after a trial. ROBERT SHOEMAKER & CO. are the General Agents for the sale of **JOHNSTON'S FLUID BEEF** for the United States.

SOLD BY DRUGGISTS AND FINE GROCERS.

AMERICAN ANALYST

—) AND (—

PRACTICAL COOK AND HOUSEKEEPER.

A SEMI-MONTHLY JOURNAL OF PURE FOOD, THE SUPPRESSION OF ADULTERATION,

AND EVERYDAY ADVICE TO THE PHYSICIAN, DRUGGIST AND DENTIST.

Office, 19 Park Place. [Entered at the Post Office, at New York, as Second Class Matter.]

VOL. IV.—NO. 4. NEW YORK, FEBRUARY 15, 1888. Whole No. 76

All Postmasters will receive subscriptions for the **AMERICAN ANALYST.**



A VALUABLE TREE.

USEFUL QUALITIES OF THE COMMON BEECH TREE.

The wood of the beech tree is more or less of a reddish-brown color, as the tree has grown in a dense forest, or has been freely exposed to sun and air. It is very hard and solid, but brittle; and when exposed to the open air, very liable to rot and to be eaten by worms. It is therefore not adapted to the purposes of the house-carpenter; but when kept always under water, it is very durable, and is accordingly employed in the erection of mills, and for weirs, sluices, etc. It is also employed for many purposes by cabinet-makers and turners. It is very much used in France for making the *sabots* or wooden shoes of the peasantry, being preferred for this purpose to every other wood except walnut, on account of its property of not absorbing water. It is one of the best kinds of firewood. Its ashes yield much potash of excellent quality. The raspings of the wood are used in the preparation of vinegar. The bark is sometimes employed for tanning when oak-bark is scarce. The beech bears lopping well, and is often planted for hedges; and it is a curious fact, that when it is prevented from attaining a tree-like size, and is kept closely pruned, the withered leaves remain on the branches all winter, which is not the case in other circumstances. In some countries, as Dauphiny and Switzerland, the leaves of the beech are collected in autumn before they have been much frost-bitten, and are used for making beds or mattresses. Beechmast, when fresh, has a sweet taste, like that of a walnut. It contains in large quantity a bland fixed oil, along with a starchy farina, a little sugar, and an astringent substance. A volatile, narcotic, poisonous principle, called *Fagine*, is also found in it, but more in the rind than in the kernel; and when not only the smooth leathery outer rind, but also the thin brown inner pellicle, has been removed, it is wholesome food. It is, however, more generally used for feeding swine, poultry, etc., and is much employed in France and other parts of Europe for the manufacture of beech oil, which, when expressed without the application of heat, and well clarified, has an agreeable taste, is fit for use as food, and keeps long without becoming rancid. When less pure, it is used for lamps and in the arts. The oil-cake which remains is good food for poultry, for swine, and even for oxen, but is injurious to horses. Many manufacturers of cocoa adulterate it with beechmast, first depriving the cocoa of its oil, which they sell separately as cocoa-butter, and trusting to the oil of the beech for supplying its place.—*Alden's Manifold Cyclopædia.*

INSOMNIA.

SOME SUGGESTIONS FOR ITS PREVENTION AND CURE.

The wise physician has recourse to medicine only when nature is too languid to respond to the mere allurements of life. This is especially true in the case of that troublesome condition known as insomonia—the outcome of nervous disease and the frequent precursor of insanity. In its aggravated form, insomonia is a grave malady, calling often for heroic treatment. But this aggravation, where it is not a primary result of advanced disease, may be established by the habitual dependence upon hypnotics. We have lately spoken of this danger, and deprecated the use of opium, chloral, cocaine, etc., etc., for trivial causes. There are a great many cases of insomonia in which simple, direct physiological treatment will accomplish the desired end. A brisk walk, followed by a cold douche on the head before retiring, will often check incipient insomnia. On the other hand, a hot shower bath may be equally effectual. Warmth, generally speaking, favors sleep; but excessive warmth has the contrary effect. On this account, while it is advisable never to go to bed with cold feet, it is equally so to avoid excessive covering. The bed should be neither too warm nor too soft; the covering barely sufficient. A cool head is as necessary as warm feet. Try a cold compress on the head, protecting the pillow with a dry cloth, and applying the compress back of the neck. The ordinary sanitary conditions must be present in a bed-chamber in order to banish sleeplessness. Excitable persons should always keep quiet during the evenings, which with all persons should be, as far as possible, a time for relaxation, and especially change. Persons of sedentary habits are better for doing some muscular work, and *vice versâ*. Regular hours and sufficient exercise are necessary; also a good digestion. Gastric disturbances induce insomnia. Late eating does not interfere with sleep, provided the food taken be easily digestible, in which case it rather favors sleep. This is especially true with invalids. Among the devices found to control insomnia we may mention the water-drip. The sound of water dropping slowly and steadily into a pan occupies and quiets the brain. This is the principle on which we are told to count sheep going over a fence, and do any sort of automatic thinking, if such an expression be permissible. A former victim of insomnia cured himself by keeping the eyeballs looking down. Another kept rolling them in one direction with good effect, repeating, meanwhile, a certain word or number. Long inspirations by the mouth and expirations by the nostrils, conceiving the air as currents, has been found effectual. All intellectual exercise should be stopped half an hour before bedtime. A tumbler of milk, instead of the usual copious draughts of water, taken during sleeplessnss, will often help to overcome it.—*Med. Register.*

VALUABLE HINTS.

HOW TO SAVE DOCTORS' BILLS.

Never go to bed with cold or damp feet.

Never lean with the back upon anything that is cold.

Never begin a journey until the breakfast has been eaten.

Never take warm drinks and then immediately go out into the cold.

After exercise of any kind never ride in an open carriage or near the window of a car for a moment; it is dangerous to health or even life.

Never omit regular bathing, for, unless the skin is in regular condition, the cold will close the pores and favor congestion or other diseases.

When hoarse, speak as little as possible until the hoarseness is recovered from, else the voice may be permanently lost, or difficulties of the throat be produced.

Merely warm the back by the fire, and never continue keeping the back exposed to the heat after it has become comfortably warm. To do otherwise is debilitating.

Never stand still in cold weather, especially after having taken a slight degree of exercise, and always avoid standing on ice or snow, where the person is exposed to the cold wind.

When going from a warm atmosphere into a cooler one keep the mouth almost closed, so that the air may be warmed by its passage through the nose ere it reaches the lungs.

Keep the back, especially between the shoulder blades, well covered; also the chest well protected. In sleeping in a cold room establish the habit of breathing through the nose, and never with the open mouth.

CORN AND WATER.—It has been estimated that during growth Indian corn draws thirty-six times its own weight of water from the soil.

Subscriptions $1 per year. Now is the time to subscribe.

American Analyst,

Published on the 1st and 15th of each month.

Subscription, - - - - - - $1 per year.
Single Copies, - - - - - - 5 cents.
Subscriptions to foreign countries, - $1.50.

Remit by Express Money Order, Draft, P. O. Order, or Registered Letter.

Advertising rates on application.

THE ANALYST PUBLISHING CO., *Publishers.*

H. LASSING, M. D., } *Editors.*
T. P. McELRATH,

No. 19 Park Place, ... New York.

NEW YORK, FEBRUARY 15, 1888.

ANSWERS TO CORRESPONDENTS.

SYMPATHY.—*What is the disease of the Crown Prince of Germany?* It is generally supposed to be a thickening of the tissues of the larynx.

W. M.—There can be no patent on an application of an old and well known appliance or principle, especially on cooking food. Apparatus of a new form involving new mechanical devices are patentable.

LIFE INSURANCE.—*Why don't you publish something on this subject, which, no doubt, will interest many of your readers?* Thanks for the suggestion. We probably will, in due season.

J. W. C.—*What is tracheotomy?* An opening made into the trachea or windpipe at the throat, through which a tube is inserted, to enable a patient to breathe freely. It is frequently resorted to whenever, through an obstruction in the upper portions of the windpipe, breathing is obstructed and thus the patient's life is endangered.

ADULTERATION IN THE TERRITORIES.

As many of the readers of the AMERICAN ANALYST have felt a mild interest in the outcome of the "Anti-Adulteration Movement," which after a year of vaporous discussion, culminated in the Washington Convention last month, we have been at some pains to prepare for their edification a few of the trade-press comments upon the result of that Convention. The *American Grocer*, which throughout the controversy represented the Thurber interest in the bill which was defeated, says: "In our opinion some of the changes made are not as well calculated to effect a suppression and supervision of adulterated, sophisticated and contaminated food as effectually as the sections as reported by the committee. Nevertheless, the act is a very strong one, and if passed will rid the country of adulterated imported food and drugs, while the National supervision it imposes over the food and drug supply of the District of Columbia and the Territories will tend to preserve the integrity of the food supply of the different States." The *Merchant's Review* says: "The retail grocers took charge of the Pure Food Convention and knocked the 'stuffing' out of the P. F. Bill. So thoroughly had the matter been ventilated of late, so deeply was the retailer interested in this kind of legislation, that we had little doubt of the outcome of the Convention when we read over the list of delegates." The *Merchants' Mail* says: "Everyone was willing to legislate upon his neighbor's goods, but his own he did not want touched. The interest manifested in each others' goods was simply wonderful, and made many of the delegates do a lot of thinking." The *Commercial Bulletin* says: "To be frank, we cannot help coming to the conclusion that an immense amount of nonsense has been vented and a great deal of empty glory won in the adoption of this remodeled bill. We accept it for the gain it makes over the present condition of things. If it is made law it will so guard at least all Territories and government grounds that no person can safely send adulterated goods into them from any part of the world." The *New England Grocer* says: "We would suggest that every grocers' association and commercial organization in the land adopt resolutions favoring the law and send the same to the proper authorities in Washington." The *Produce Exchange Bulletin* says: "The dishonest anti-oleo clique were defeated all along the line, and were plainly shown that they had completely forfeited the respect and confidence of those they had duped and misled so long. In future neither the manfacturers or retailers will have any use for the east side gang or their rotten butter allies." The *Denver Grocer* says: "We are free to admit that the manner in which the meeting was conducted will utterly destroy any possibility of getting the bill through Congress, and we will also state that the next meeting will not even have a quorum." The New Jersey *Trade Review* says: "The sentiment of our legislators is undoubtedly in favor of purifying the food and drug supply of the country, but there are members of both houses who think legislation at this time premature and injudicious." The *Retail Grocers' Advocate* feels that its mission has not yet been wholly fulfilled, but says, defiantly: "If patient waiting will pass that bill, and virtue is its own reward, as some people think, then either this Congress or some other Congress must pass either this or some other bill. The counterfeit butter sharks are still laying for us, but they won't do any more harm as long as the little band of workers keep a-kicking, and if we can all keep on kicking as long as they can keep on waiting, we will all get there either in this or some other world."

A BRILLIANT ADVISER.

The following extract from an evening contemporary furnishes a fair specimen of the kind of brains to which the public is indebted for sensational newspaper chemistry. According to this bright individual iced tea must be made by some cold process, probably similar to the one by which rum is distilled for Roman punches:

"Give me a tenderloin well done, some Lyonnaise potatoes and some celery."

"Yes, sir."

"And, waiter, bring me some iced tea."

"The worst thing you could drink," remarked a doctor who was taking lunch with the reporter.

"How is this?"

"First, the cold water is not good for your stomach, and then as a preventive from any epidemic it is well to boil all fluids used for drinking purposes. Tea taken hot is more wholesome than iced tea. To prove this, just look at the Chinese. Their population is enormous but it could never have increased to its present numbers if epidemics had ravaged that empire as they have those of the West. The Chinese are a healthy people in spite of their indescribably filthy surroundings. I attribute this to their use of tea as a beverage. This is the only redeeming feature of their lives. They do not drink it iced, but hot, and to make it they have to boil the water. In the presence of an epidemic of cholera, typhoid fever or dysentery the wisest precaution to take is to boil all fluids used for drinking purposes."

PSYCHOLOGY OF JOKING.

In a recent issue of the London *Lancet* we find an interesting paper, by Dr. Jackson, embodying an analysis of joking. The writer regards punning as the lowest stage of the evolution of humor, but even in the pun he sees material for the study of normal mentation. In a pun we have two ideas called to the mind at once—a double vision, as it were; and, as all thought is the comparison of relations, this is simply a caricature of the normal process of thought. The world owes a great debt to the first punster, because he began the 'play' of the mind (in the same sense as art is founded on the play-instinct), and so detached himself from the grossly useful, and showed a surplus energy capable of developing into the highest traits of mankind. To lack a sense of humor is a bad thing. "The man who has no sense of humor, who takes things to be literally as distinct as they superficially appear, does not see fundamental similarities in the midst of great superficial differences, overlooks the transitions between great contrasts. I do not mean *because* he has no sense of humor, but because he has not the surplus intellect which sense of humor implies."

CREMATION IN FRANCE.

The advocates of cremation, in France, do not seem to be making very rapid headway. They have for a long time been urging the passage of a law legalizing this method of disposing of the dead. A law passed Nov. 15, 1887, gives to any adult or minor who is capable of making a will, the right to dictate the manner in which his funeral services shall be performed, their civil and religious character, and the mode of interment, but the conditions of the different methods of sepulture are to be decided by the municipal authorities. The effect of this last clause is that the operation of the law is suspended so far as cremation is concerned, until a decree shall be passed by the council of state determining, under what conditions it may be permitted. The friends of cremation have persuaded the city council of Paris to urge upon the government the necessity and importance of immediately making regulations which will allow cremation to be practised.

ELECTRIC BUOYS.

The Light-house Board is about to undertake the lighting of bouys which mark dangerous points in our rivers and harbors by electricity. The present method consists in supplying them with oil or gas, which entails much trouble and expense in replenishing them. Lighted by electricity they would be at all times under control.

THE AMERICAN ANALYST.

SOME OF THE THINGS SAID ABOUT IT.

Its Useful Mission.

The AMERICAN ANALYST, of New York, has widened the sphere of its great usefulness and adds *Practica Cook and Housekeeper* to its name. The chief mission of this able semi-monthly is to suppress the adulteration of articles of food and drink and educate people to buy only pure articles of food and cook them properly. There is both health and wealth in this course.—*Southern Cultivator*, Feb., 1888.

An Educator.

The AMERICAN ANALYST has begun a practical course of Volapuk, the new universal language, giving so clear and plain directions that from these articles alone a careful student would be able to read and speak the language. The articles are well worth the careful perusal even of those who do not expect to make a practical use of the language.—*Pittsburg (Pa.) East End News*, Jan. 21, 1888.

Likes the Premium.

NEWARK, N. J., *February* 7, 1888.

Editors AMERICAN ANALYST: Your book (Cyclopœdia) received. Accept my thanks. I am satisfied that I could not have invested $1 *any better*.

Truly, A. A. HUMBERT,
266 Halsey Street.

ANOTHER METHOD.—A teacher said to a member of the State Board of Health who was investigating the condition of her room:

"No, I haven't any ventilators. I don't see any use for them."

"But how do you keep the air pure?"

"Oh, I've got a thermometer."

VOLAPÜK.

A PRACTICAL COURSE OF SELF-INSTRUCTION IN THE UNIVERSAL LANGUAGE.

LESSON IV.

DECLENSIONS.

57.—Possessive case. The possessive singular always ends in *a*.

Ex.: God, God; goda, God's or of God; flen, friend; flena, of the friend.

58.—The possessive of proper names is formed by making them adjectives, as Marianik, Anaik, etc. Another form is: de Maria, of Mary; de Ana, of Ann, etc.

59.—(1.) Compound expressions, like "a glass of water," may be given in three different ways, as—

with the possessive (2d case), glät vata,
" nominative (1st case), glät vat;
with *de*— "of," glät *de* vat.

While one may also say—

glät fulik de vat, glass full of water.

(2.) On the contrary, one writes for a beer glass: bilaglät, or glät al bill, or glät plo bill; a wineglass—

vinaglät, or glät alvin, or glät plo vin.

60.—The objective singular always ends in *é*.

Ex.: din, the thing; diné, to the thing.
kap, the head; kapé, to the head.
dut, diligence; duté, to diligence.
cil, a child; cilé, to a child.
lep, the monkey; lepé, to the monkey.

61.—In Volapük the objective case never requires the word *to*, as in English. The objective case must always be formed by affixing the letter *é*, which may never be omitted.

62.—The accusative case, singular, always ends in *i*.

Ex.: 1st case. 4th case.
penéd, the letter; penedi, the letter.
kanel, the artist; kaneli, the artist.
bakel, a baker; bakeli, a baker.
bäk, the back; bäki, the back.

PLURAL (PLUNUM).

63.—The possessive plural always ends in *as*.

Ex.: balib, the beard; balibas, of the beards.
ban, bath; banas, of the baths.
bät, enticing; bätas, of enticings.

64.—The dative plural always ends in *es*.

Ex.: ben, graces; benés, to graces.
bid, the kind; bidés, to the kinds.
bim, a tree; bimes, to trees.
bod, the loaf; bodes, to the loaves.

65.—The accusative or 4th case plural always ends in *is*

Ex.: bluf, the trial; blufis, the trials.
boed, a plank; boedis, planks.
buk, book; bukis, books.
bün, pear; bünis, pears.
but, boot; butis, boots.

66.—The vocative or 5th case, for both singular and plural, is simply a nominative with *o* placed before it and kept separate.

Ex.: cen, change; O cen glöbol, O fascinating change.

67.—When a note of exclamation (!) is written after the noun in Volapük, the O of the vocative may be omitted.

Ex.: O deception! cit!

But in conversation the o shall always be expressed.

68.—Graduation of signification. (Xänum*am* suema.) Volapük shows at least eleven different ways, by which gradually to increase the meaning of a word.

Ex.: town, city; zif.
(1.) miserable little town; *luzifil*.
(2.) very small town: *smazifil*.
(3.) small town; zif*il*.
(4.) miserable town; *luzif*.
(5.) small city; *smazif*.
(6.) town; zif.
(7.) miserable big town; *lulezil*.
(8.) big town; *lezif*.
(9.) miserable important town; *luglezif*.
(10.) important town; *glezif*.
(11.) important big town; *glelezif* (*leglezif*).

69.—Affixes for diminutives. (Finam smalama.)

In Volapük the diminutives of words are formed by adding the syllable *il* to them (in English, adjectives are generally used for that purpose).

Ex.: bod, loaf; bod*il*, small loaf.
cog, joke; cog*il*, little joke.
cem, room; cem*il*, small room (chamber).
kanit, verse; kanit*il*, little verse.
kat, cat; kat*il*, small cat, kitten.

70. In Volapük the inferior meaning (less or worse quality) of a word is shown by prefixing *lu* (being the reverse of *le*) to it.

Ex.: pak, spreading; *lu*pak, pollution.
sanel, doctor; *lu*sanel, quack.
bük, print; *lu*bük, waste paper.

71.—Formation of adjectives. (Fomam ladyekas.) Adjectives always end in *ik*.

Ex.: klif, rock; klif*ik*, rocky.
kop, body; kop*ik*, bodily.
san, bliss; san*ik*, blissful.
ston, stone; ston*ik*, stony.
klot, dress; klot*ik*, dressing.
nat, nature; nat*ik*, natural.

72.—Different affixes of adjectives—ik, lik, nik, sik.

Ex.: boad, wood; boad*ik*, wooden.
boad*lik*, woody. boad*nik*, wooded.
yel, year; yel*ik*, one year old.
yel*sik*, yearly, annual.

73.—Formation of the comparative degree. (Fomam lüena telid xänuma.)

The comparative always ends in *ikum* (*ik* for the adjective, *um* for the comparative).

Ex.: koten, contentment; kotenikum, more content.
kud, care; kudikum, more careful.
dan, thank; danikum, more thankful.
deb, guilt; debikum, guiltier.

Make adjectives in the comparative degree of—

köl, color; nid, brilliancy; nim, beast;
nil, proximity; nom, rule; nolüd, north.

74.—Formation of the superlative degree of comparison. (Fomam lüena kilid xänuma.)

The superlative always ends in *ikün* (*ik* for the adjective, *ün* for the superlative).

Ex.: def, defect; defikün, most defective.
dek, ornament; dedikün, most ornamental.
dib, depth; dibikün, deepest.
div, value; divikün, most valuable.

Make adjectives in the superlative degree of—

dol, grief; not, knowledge; num, number;
nul, newness; palet, party; pök, fault.

75.—The above syllables *um* and *ün* may be affixed to all *participles* as well; but, of course, without *ik*.

Ex.: spalöl, excusably.
spalölum, more excusably.
spalölün, most excusably.

76.—Comparative and superlative degrees of nouns. (Plulüen e plülüen subsatas.)

Volapük has also the comparative and superlative degree of nouns.

77.—Volapük makes adjectives of all nouns by the affix ik (lik, nik, sik).

Ex.: cil = child; cilik = childish.
ji-son=daughter; ji-sonik=(as a daughter).
son=son; sonik=as a son.

78.—The adjectives are usually placed directly after the noun to which they refer; and then they are not inflected to indicate gender, number, or case, unless such be advisable for harmony, clearness in poetry, etc.

They correspond in gender, number and case, with their noun, when placed before it, or farther back from it.

Ex.: (1.) Placed directly after the noun, unchanged.
ji-gokes visedik, to the sensible hens.
(gok, cock; ji-gok, hen; ji-goke, to the hen; ji-gokes, to the hens; vised, sense; visedik, sensible [adj.]).
(2.) Placed farther back from the noun; changed for gender, number and case, like the noun.
ji-gokes fol olas visedikes, to your four sensible hens.
(If visedik had not been inflected, the meaning of the sentence would be —to the four hens of your sensible persons).
(3.) Placed before the noun, inflected—
visedikes ji-gokes, to the sensible hens; which shows the same as under (1).

79.—If a noun has *two* or *more* adjectives, the most particular one of these is placed before the noun, and inflected to correspond.

Ex.: gletiks doms nulik, the big new houses.

N. B.—This arrangement is especially made to avoid accumulation of words ending in *ik*.

NUMERALS (Numavöds).

Numerals of quantity (Stabanums).

80.—Digits (Balelas nums).

The numbers from 1 to 9 end in *l*, as:

1, bal.	4, fol.	7, vel.
2, tel.	5, lul.	8, jöl.
3, kil.	6, mäl.	9, zül.

81.—Changes.

one (feminine) = ji-bal; of-bal (bal-ji, bal-of).

one (neuter) = os-bal, bal-os (with a dash (—)); (because balos means it unites).

the ones (....the others) = (balims....votims).

of *the* one = bal*a*.

of the one (feminine) = ji-bal*a*.

to the one (feminine) = ji-bal*e*.

the one (4th case feminine) = ji-bali.

82.—Tenfolds (Balselas nums). All tenfolds end in *ls*, as:

10, bals.	40, fols.	70, vels.
20, tels.	50, luls.	80, jöls.
30, kils.	60, mäls.	90, züls.

Hundred is called *tum*.

thousand " mil.
million " balion.
billion " telion.
trillion " kilion.
four million " folion.
five million " lulion.

thousand million is called baliad, etc.

Then also balsion (decilion), telsion, zülsion, etc.

The binary numbers are formed thus:

eleven, balsebal (10 and 1).
twelve, balsetel (10 and 2).
thirteen, balsekil (10 and 3), etc.

47,536 is, in Volapük, folsevelmil lultum kilsemäl (40 and 7 thousand 5 hundred thirty and 6).

83.—Comparison of tenfolds.

In Volapük tenfolds are compared thus:

Possessive (2d Case).

of the twentyfold—telsa.
of the twentyfolds—telsas (and not telas, the *l* and *s* in tenfolds always stand together).

Objective (3d Case).

to the thirtyfold—kilse.
to the thirtyfolds—kilses.

4th Case (*Accusative*).

the fortyfold—folsi.
the ninetyfolds—zülsis.

84.—Ordinal numerals (Leodanums).

All the ordinal numerals end in *id*.

Ex.: balid—the first.
telsebalid—the twenty-first.
tumid—the hundredth.
milid—the thousandth.
balionid—the millionth.

(*To be continued.*)

PURE FOOD IN THE TERRITORIES.

THE BILL TO ORGANIZE A NATIONAL BUREAU ON ADULTERATION.

We give below the full text of the food and drug bill which Senator Sherman has introduced in the U. S. Senate and which is now before the Finance Committee of that body. It was indorsed by the Anti-Adulteration Convention in Washington last month in preference to either of the instruments which had been so widely discussed during the previous year:

AN ACT

To establish in the Department of the Treasury a Bureau on Adulteration and to provide for the maintenance thereof, and to regulate or prohibit the importation, manufacture and sale of adulterated articles of food and drugs.

SECTION 1. *Be it enacted, etc.*, That there shall be established in the Department of the Treasury at Washington a bureau, with a chemical laboratory, to be known as the Bureau on Adulteration. The President shall appoint, by and with the advice and consent of the Senate, a competent Chief Officer of said bureau, who shall receive a salary of————per year, and hold office for four years and until his successor is appointed. The Secretary of the Treasury shall appoint such chemists, inspectors and clerks in said bureau, not exceeding ten in number, of such grade and class as he may deem necessary for the proper enforcement of this act; provided, that total expense of said bureau, including the necessary traveling expenses of inspectors and employes, but exclusive of offices, laboratory, stationery and supplies, which shall be provided by the Secretary of the Treasury, shall not exceed $50,000 per annum.

SEC. 2. That no person within the District of Columbia or in any of the Territories, or in any fort, arsenal, dockyard, or reservation, or other place under the jurisdiction of the United States, shall manufacture, sell, or offer for sale, or shall cause any one in his employ to manufacture, sell, or offer for sale, any article of food or drugs which is adulterated within the meaning of this act; provided that any person accused of selling or offering for sale any article adulterated within the meaning of this act, and any manufacturer accused of selling or offering for sale any article found to have been adulterated by reason of there having been used in its manufacture an ingredient, respectively, who shall prove that he procured such article or ingredient with a written or printed warranty, which warranty may be printed on a label, or marked upon the package containing same or printed on a bill or invoice, and may be for one or a series of deliveries, that it was pure and unadulterated according to the definitions herein, and any person so accused who shall prove that in the ordinary course of his business he was employed on behalf of other persons to make or sell such goods, and was without knowledge of their adulterated character, and that he gave to the prosecuting officer or attorney all the information in his power with respect to the quality of the article and the person or persons by whom said articles had been manufactured or sold, shall be discharged from prosecution; provided, however, that such proof in defense shall be filed in court or with the prosecuting officer prior to the opening of the case in court. Any person violating any of the provisions of this section, or making or giving a false or fraudulent guaranty, or swearing falsely in relation to any of the proof or things required herein, shall be deemed guilty of a misdemeanor and upon conviction thereof shall for a first offense be fined not more than $100 and for each subsequent offense not more than $500, or imprisonment not exceeding one year, or both, in the discretion of the court.

SEC. 3. That it shall be the duty of all collectors of customs, through the appraisers or other proper officers, to cause examinations to be made of articles of food or drugs offered for importation which may appear to be, or which such collector, appraiser or other officer may have reasonable grounds to believe are adulterated, and if on examination of any article of food or drugs imported from any foreign country it is found to be adulterated within the meaning of this act, a return to that effect shall be made upon the invoice, and the article or articles so noted shall not be permitted to pass the custom house, or to be delivered to the consignee, unless, on re-examination as provided for in this act, it shall be found that the said article or articles are not adulterated. The Secretary of the Treasury is authorized to appoint at each of such ports of entry as he may deem necessary an expert chemist, whose duty it shall be to aid in the inspections and examinations required by this section.

SEC. 4. That in case of a return by an inspector, appraiser or other proper officer that any imported article of food or drugs is adulterated, the owner thereof or person to whom said article is consigned, shall be entitled, within twenty days after he shall have received notice of such return, at his own expense to have it re-examined, and upon receiving a request therefor and a deposit of such sum of money as he may deem sufficient to defray the expenses thereof, the collector of customs shall forward to the Commissioner of the Department of Agriculture at Washington a sample of said article drawn under the direction of said collector, and the Commissioner of Agriculture shall immediately cause a careful analysis of the article in question to be made by the analyst of said department and a certificate of the result thereof shall be forwarded to said collector duly verified by said analyst under oath; and in case the report by certificate of said analyst shall declare the previous return of adulteration to be erroneous, and the said article or articles to be unadulterated within the meaning of this act, the deposit shall be returned and the said articles shall be returned to the owner or consignee, and any expenses incurred by said owner or consignee shall be refunded to him, and pass the custom house upon complying with the usual regulations and on payment of the duties, if any. But in case the officer's return shall be sustained by the analyst of the Department of Agriculture the said articles shall be destroyed in such manner as the Secretary of the Treasury may direct, provided, that the owner or consignee, on payment of charges of storage and other expenses necessarily incurred by the United States, and on giving bonds with sureties satisfactory to the collector, agreeing to remove said articles from the United States, shall have the privilege of exporting them at any time within the period of six months after the date of the report of the inspector or public analyst.

SEC. 5. It shall be the duty of the National Bureau on Adulteration to prepare instructions governing the work of officers and chemists charged with the examination of food and drugs at the various ports which, when approved by the Secretary of the Treasury, shall control their action and that of collectors of customs in preventing importation from foreign countries of food or drugs adulterated within the meaning of this act. It shall be the duty of every collector of customs to report monthly to the National Bureau on Adulteration the number, kind and name of articles in which adulteration was detected, with the names of the shippers and importers or consignees, which shall be published in the monthly bulletin provided for in Section 6 of this act; but no such publication shall be made until the twenty days within which such re-examination can be demanded shall have expired, nor, in case of appeal for re-examination as provided in Section 4 of this act, until the final determination of said re-examination.

SEC. 6. That the National Bureau on Adulteration shall make or cause to be made examination of specimens of food or drugs collected under its direction in such parts of the country as are subject to national jurisdiction. Upon any article being obtained for examination, it shall be divided into three parts, which shall be duly sealed, one of which shall be delivered to the person from whom it was purchased, who shall be informed that an analysis or examination is intended, and one part shall be preserved by the National Bureau on Adulteration for reference, subject to the order of the court in any proceedings which may be instituted. The National Bureau on Adulteration shall publish in a monthly bulletin the names of all articles found to be adulterated within the meaning of this act, and the nature of such adulteration. But no publication shall be made revealing the ingredients or processes employed in the manufacture of proprietary articles made by secret formu'a provided said articles are not adulterated within the meaning of this act. If it shall appear from such examination that any of the provisions of this act have been violated, said bureau shall at once report the facts to the proper United States District Attorney, with a copy of the results of the analysis duly authenticated by the analyst under oath.

SEC. 7. That it shall be the duty of every United States District Attorney, to whom the National Bureau on Adulteration or any collector of customs shall report any violation of this act, to cause proper proceedings to be commenced and prosecuted without delay for the fines and penalties in such case provided, unless, upon inquiry and examination, he shall decide that such proceedings cannot probably be sustained, or are voided by the provisions of Section 2 of this act, in which case he shall report the facts to the National Bureau on Adulteration.

SEC. 8. That an article shall be deemed to be adulterated within the meaning of this act—

(*a*) In the case of drugs:

1. If, when sold under or by a name recognized in the United States Pharmacopœia, last edition, it differs from the standard of strength, quality or purity laid down therein.

2. If, when sold under or by a name not recognized in the United States Pharmacopœia, last edition, or the United States Dispensatory, or the National Dispensatory, it differs materially from the standard of strength, quality or purity laid down in such work.

3. If its strength, quality or purity fall below the professed standard under which it is sold.

(*b*) In the case of food or drink:

1. If any substance has been mixed with it so as to reduce or lower or injuriously affect its quality or strength, or fraudulently increase the weight.

2. If any inferior substance has been substituted wholly or in part for the article.

3. If any valuable constituent of the article has been wholly or in part subtracted.

4. If it be sold under the name of another article.

5. If it consists wholly or in part of a diseased or decomposed, or putrid, or rotten animal or vegetable substance, whether manufactured or not; or in the case of milk, if it is the product of a diseased animal.

6. If it be colored or coated, or polished or powdered in a manner injurious to health.

7. If it contains any added poisonous ingredient or any ingredient which may render such article injurious to the health of a person consuming it; provided that the National Bureau on Adulteration may, with the approval of the Secretary of the Treasury, from time to time declare certain articles or preparations to be exempt from the provisions of this act; and provided, further, that the provisions of this act shall not apply to mixtures or compounds recognized as ordinary articles of food, when the same are not injurious to health, and that the articles are distinctly labeled as a blend or mixture.

(*c*) In the case of candles of domestic manufacture, and chocolate of domestic manufacture:

If they contain terra alba, barytes, talc, chrome yellow or mineral substance, or poisonous colors or flavors, or other ingredients deleterious or detrimental to health.

SEC. 9. That it shall be the duty of the National Bureau on Adulteration to prepare and publish, from time to time, lists of the articles, blends, mixtures or compounds declared to be exempt from the provisions of this act in accordance with the preceding section. The National Bureau on Adulteration shall also from time to time fix the limits of variability permissible in any article or compound.

SEC. 10. The term "food," as used in this act, shall include every article used for food or drink by man. The term "drug," as used in this act, shall include all medicines for internal or external use.

SEC. 11. All the regulations and declarations of the National Bureau on Adulteration, made under this act from time to time and promulgated, shall be printed in the statutes at large.

SEC. 13. The act shall take effect six months after its passage; and be it further provided that in the case of articles manufactured or produced prior to the passage of this act, such articles shall be exempt from the provisions of said act for a period of one year.

KNEIPEN.

HOW THE GERMAN STUDENTS CONTEND IN BEER DRINKING.

The old English custom of "taking wine with a person," each merely sipping from his glass, seems almost a teetotal observance when compared with the corresponding usage of the German *Kneipe*. In the first place no one must drink *solus*. If anyone ventures to take a solitary swig, he is forthwith compelled to drain a full measure to the health of the company generally. The proper course is to drink to someone else, at the same time specifying the quantity the drinker proposes to imbibe. The person honored is bound to accept the challenge, which he may do with a simple "drink away," or some equivalent phrase, when the challenger is bound to drink off, within the next five minutes, the quantity he has named, and within five minutes more the challenged must drink to him, "in response," the like quantity. If either fail in his obligation, excommunication is the result. But the challenged party may not be content simply to accept the challenge. Stirred with noble ardor, he may "go higher," doubling the quantity named. The challenger may do the same, and so on, until the total quantity reaches a maximum of eight tankards, which are drunk off alternately, one by one, with an interval of five beer-minutes between each. The beer drunk by the challenged, "in response," is not allowed "a double debt to pay." Probably some craven soul in the past devised the plan of saving his brains and his pocket by making the same beer which he drank in response to one person, also serve the purpose of a challenge to another.

CHINESE DRUG STORES IN AMERICA.

PAPER READ BY S. CULIN BEFORE THE PHILADELPHIA COLLEGE OF PHARMACY, NOV. 15, 1887.

Not the least interesting feature of the Chinese quarter in our American cities are the drug shops which these conservative people have established for the sale of their native drugs in connection with their general stores. These shops reduplicate the herbalists' shops of Hong Kong, and their native villages. They are usually conducted by a separate company from that of the store with which they are associated, and their supply of drugs arranged on one side of the shop, apart from the other wares. The sign of the company, a green or black tablet with the felicitous name invariably selected for such enterprises, inscribed in gilded letters, is suspended within the shop. The drugs, such as are frequently called for, are contained in boxes or drawers ranged in tiers behind the counter. These boxes are usually divided into four compartments, and their contents indicated by neatly-written labels of red paper, or sometimes, in lieu of labels, a tablet is suspended in front of the shelves, upon which appears a plan of their multitudinous contents. Powders are kept in tin or brass boxes in a drawer beneath the counter; a series of bottles contain nuts and mineral substances; while poisons, and some of the more rare and valuable drugs, are dispensed from a locked case with glass doors. Piled high above the cases are innumerable packages, each with the name of its contents written on the projecting end, which constitute the reserve supply of drugs, or contain barks and herbs seldom called for by the practitioners here. Space will not permit any extended reference to the materia medica of China, of which almost a complete collection may be found in the stores we have described. It is popularly known to us through the accounts of travelers as grotesque and childish, composed of "dragons' bones" and scorpions, snake skins and melon seeds, and substances selected more on account of their scarcity and curious origin than for any medicinal virtues they may possess. The results of such observations as have been made by competent foreign scholars are contained in transactions of learned societies and books generally inaccessible to American students, but they go far to show that many of their drugs are not without great value, a large number of them, in fact, nearly identical with those of our own pharmacopœia, and that many important discoveries have resulted from the centuries of experiment upon which their practice of medicine is founded.

Nearly all of the medicines in general use here, with a few important exceptions, are of vegetable origin, and consist of nuts, berries, roots, barks and herbs. The subjoined list, furnished by a Chinese physician in Philadelphia, contains the names of the ten drugs he considers valuable, if not indispensable, and gives some idea of the substances actually employed in their practice:

Ching fong tong. The root of a plant.

Ho Shau U. Root of Aconitum Japonicum. From Szechuen province.

Tai tong kwai. Root of Aralia edulis. From Szechuen province.

Hung kwo ki. Fruit of wild Berberis Lycium. From Szechuen province.

Ch'ün tó chung. The outer bark of a tree. From Szechuen province.

Pak'kí. A kind of lung wort.

Ch'ün kung. "Nodular masses, consisting apparently of the root-stock of some unbelliferous plant allied to angelica." From Szechuen province.

Kòm ts'ò. Liquorice root.

Wái shán. The root of a water plant.

Pák shut. The root of Attractylodes alba. From Szechuen province.

The medicines are all imported from China, either from Hong Kong or Canton, and reach here in their crude state, the herbs and barks in large pieces, and the tubers and roots usually entire. It is customary to cut the former in small pieces, and slice the latter in delicate segments, before placing them in the drawers and boxes for sale. A large cleaver, yeúk ts'oi k'ap, mounted with a hinge upon a slightly inclined table, is employed to chop the grasses and herbs in convenient lengths, while the tubers are sliced upon an instrument resembling a carpenter's plane, yéuk p'ò, inserted in a long bench, upon which the operator sits, the pieces falling through upon a tray placed beneath. A canoe-shaped mortar of cast-iron, yeúk shün, is employed to reduce some of the more refractory nuts and minerals to powder. It stands upon four legs, and a heavy disk of iron is rolled backward and forward within it by means of a wooden axle, to which the operator applies his feet, while his hands are free to perform other work.

The clerks who dispense the medicines have usually had some experience at home. They are paid from $25 to $30 per month, with their board and lodging, the current wages among the Chinese here for unskilled labor; but their work is light, and they sometimes assist with the lottery drawings, for which they receive additional compensation. They frequently act as book-keepers, and, in common with the shopkeeping class, are brighter and better educated than the mass of the immigrants. Their knowledge of medicine is derived almost entirely from experience, no books on the subject being used or studied by them, and the Pún tso, or Herbal, is not to be found in any of their shops. The prescriptions furnished by the native doctors, which are usually written upon Chinese letter paper and a foot in length, contain only a list of the names and quantities of the medicines required, with concise directions for their preparation, no date or signature being appended. Upon being presented to the clerk over the counter, he weighs out the ingredients, and places them separately upon a large sheet of paper, going over them carefully afterward to prevent any possible mistake. A hand balance, li tang, is used, consisting of a decimally graduated ivory rod, from one end of which a brass scale pan is suspended by silk threads. The smaller kind weigh from one li to five and one-half léung, or Chinese ounces, and are remarkably accurate. Various simple expedients are resorted to by the clerk in the preparation of the medicines. Some are powdered in the upright iron mortar, chung hòm, and others in the porcelain mortar, lúi ún; certain roots and seeds are roasted in a pan, while others are steeped for a few moments in Chinese rice spirits. The package of medicine is carried home to be boiled, and the infusion taken at one dose by the patient. Some hak tsò, Chinese prunes, are usually furnished to be eaten at the same time. The prescription, of which no record is kept, is returned with the medicine. The practice of medicine by the Chinese doctors here is confined almost entirely to what is called by the Chinese noi fo, or internal medicine. Ngoi fo, "external practice" or surgery, which constitutes a distinct branch of their healing art, is little understood by them, and their patients seldom make greater demands upon them than for a cure for a cold, indigestion or headache. But slight as may be their ailments, the Chinese of our cities are constantly taking medicines. Well, they resort to prophylactics, or try to improve their digestion; ill, they take one prescription after another, and drink quantities of unpalatable tea every night, usually, upon their own testimony, to little advantage. Not less than four shops supply medicines to the little colony in Philadelphia, and day and night their clerks are busy, weighing and pounding and tying up packages for the relief of their suffering countrymen. Nor are the drugs regularly prescribed by their physicians the only medicine used by them; almost every shop furnishes an assortment of pills and teas compounded by Canton pharmacists.

First among these are the Wai Shang Un, or "Life Preserving Pills," which are taken by both the sick and well on account of their supposed vitalizing properties. In common with many other Chinese pills they are enclosed in a shell of vegetable wax, upon which is stamped the name, with that of the makers, in vermillion and gold. One of these boluses—they are nearly an inch in diameter—is taken at a dose. The usual price for the best kind is $1 apiece. They are said to be composed of yan sham (Manchurian ginsing), luk yung (deers' horns), and other expensive drugs: A cheaper kind is entiled upon a printed advertisement, Yan sham luk yung ning shan po shan ün (ginseng and deers'-horn pills for tranquilizing the spirits and strengthening the kidneys.) These also purport to contain yuk kwai, a precious cinnamon, the bark of the Cinnamomum Cassia (?), one of their most highly valued drugs. That used by the Chinese pharmacists here is imported in boxes covered with raw silk, each containing one piece, about 14 inches in length. The price varies with the quality, from $2.50 to $5 for one léung. Sú hòp ün (rose mallow pills), are taken to relieve flatulency; king fung ün are intended for children; ying im ugán ün (the well approved eye pills), are dissolved in water and used as an eye lotion; Shan hau pak chuk ün purport to be a remedy for a certain disease, and Shan hau hung ün (divinely efficacious red pills), are taken as a prophylactic against the same complaint. Occult and magical properties are claimed for nearly all of these compounds, and they are not regarded with much favor by the regular physicians. Several varieties of ginseng are sold in the shops. The American root, sold under the name of yéung sham (foreign ginseng), is the cheapest, the current price being 40 cents per léung. Next in value is kat lam sham, said to be obtained from Corea, costing 50 cents per léung. Kò lai sham (Corean ginseng), is the kind most used here, and costs from $2.50 to $3.50 per léung. Yan sham, Chinese or Manchurian ginseng, the most precious and famous drug of the Chinese pharmacopœia, is seldom, if ever, to be found in the stores. Occasionally one sees small roots purporting to be yan sham kept wrapt in raw cotton in tin boxes; but the enormous price asked for them, often from $60 to $100 for one léung, prevents their use except in extreme cases, or as a matter of luxurious extravagance.

In concluding these notes we desire to call the attention of American students to the field afforded by these Chinese drug shops for the investigation and study of Chinese materia medica. Local observers in the Treaty Ports have made many observations; the series of papers now in course of publication by Mr. Charles Ford, assisted by his able colleagues in the *China Review*, are a most valuable contribution; but the subject is far from exhausted, and the student of historical medicine, who finds thus presented to him many of the drugs and methods of the mediæval leech, cannot fail to appreciate the light thrown by them upon the origin and development of the science of medicine in the western world. How far Europe has been indebted to China in this, as in so many of the useful arts, remains as yet almost a matter of conjecture.

INGENIOUS MECHANISM.—The Bank of England doors are now so finely balanced that a clerk, by pressing a knob under his desk, can close the outer doors instantly, and they cannot be opened again except by special process. This is done to prevent the daring and ingenious unemployed of the metropolis from robbing the bank. The bullion departments of this and other banks are nightly submerged several feet in water by the action of machinery. In some banks the bullion department is connected with the manager's sleeping-room, and an entrance cannot be effected without shooting a bolt in the dormitory, which in turn sets in motion an alarm. If a visitor during the day should happen to knock off one from a pile of half sovereigns, the whole pile would disappear, a pool of water taking its place.

HEAVY HAMMERS.—The following is a list of the heaviest hammers in Europe from an historical point of view: Fr. Krupp, Essen, 1868, forty tons; Terni Works, Italy, 1873, fifty tons; Creusot, France, 1887, eighty tons; Cockerill, Belgium, 1885, one hundred tons; Fr. Krupp, Essen, 1886, one hundred and fifty tons. The last is now the heaviest steam hammer in the world.

DOMESTIC DIETETICS.

SEASONABLE FOOD.

February.

MEATS.—Beef, tongue, mutton, pork, venison, ham, kidneys, liver, sausage.

GAME AND POULTRY.—Grouse, hare, pigeon, chicken, duck, goose, turkey.

FISH. — Anchovy, bass, carp, catfish, eel, flounder, halibut, herring, lobster, mackerel, oysters, rock bass, rock fish, salmon, smelt, whitefish.

VEGETABLES. — Artichokes, carrots, celery, onions, parsley, parsnips, potatoes, turnips.

FRUITS.—Apples, oranges, bananas.

PRACTICAL RECIPES.

MUTTON SOUP.—Cut a neck of mutton into four pieces, and put it aside, then take a slice of the gammon of bacon and put it in a saucepan with a quart of peas and enough water to boil them; let the peas boil to a pulp, then strain them through a cloth, and put them aside; add enough water to that in which is the bacon to boil the mutton, slice three turnips, as many carrots, and boil for an hour slowly, adding sweet herbs, onions, cabbage, and lettuces chopped small; then stew a quarter of an hour longer, sufficient to cook the mutton, then take it out, and take some fresh green peas, add them with some chopped parsley and the peas first boiled to the soup, put in a lump of butter rolled in flour, and stew till the green peas are done.

BACON TOAST.—Cut some thin slices of bread about two or three inches long, and some streaked bacon in small pieces, dip them into a raw egg beaten up with shred parsley, green onion, shalots, and pepper, fry over a slow fire, and serve with clear sauce, and a little vinegar in it.

PAN-CAKES.—Take 1 cupful of cerealine flakes; 7 eggs; a teaspoonful of baking powder; 1 pint of flour; a little salt, and milk to make a thin batter. Beat the whites and the yolks of the eggs separately. Add the yolks and then the whites and flour alternately, until the batter is of the right consistency. Grease the frying pan with a teaspoonful of lard. Pour in a ladleful of batter, and fry quickly. Roll the pan-cake up like a sheet of paper, and lay it on a hot dish. Put in more lard and fry again. Serve one-half at a time. Serve with currant jelly or preserves.

LITTLE SPICE CAKES.—Take one pound of butter, one pound of sugar, half a pint of molasses, powdered ginger, allspice, ground cinnamon (of each half an ounce), half a grated nutmeg, and three teaspoonfuls of Horsford's baking powder and sufficient flour to form it into a dough; melt the butter and stir it into the molasses and sugar; mix the baking powder with the flour, and work all together into a rather stiffish dough, which roll out into a thin sheet and cut out small round cakes. Bake on buttered tins in a moderate oven.

EGG BISCUIT.—Two cups of warm milk, two eggs, two heaping tablespoonfuls of butter, half a cake of compressed yeast dissolved in warm water, one quart of sifted flour, one teaspoonful of salt, mix with the butter (melted, but not hot) the yeast, salt and three cups of flour together over night, and set in a covered bowl to rise. Early in the morning add the beaten eggs and the rest of the flour and set for a second rising of an hour or longer. When light roll into a sheet almost an inch thick, cut into round cakes, and lay in a floured baking pan. At the end of half an hour bake in a good oven. They are delicious, cold or hot.

CEREALINE SOUFFLE.—Into 1 quart of boiling milk stir gradually 6 ounces of cerealine flakes, 6 ounces of sugar, and 1 teaspoonful of extract of lemon. Stir and boil four minutes. Take off the fire, stir, and add gradually the yolks of 6 eggs beaten. Beat the whites of the 6 eggs to a thick froth and add to the mixture. Then pour into a light buttered dish and bake in a moderate oven. Sprinkle with powdered sugar and serve immediately.

CLAM SCALLOPS.—Chop fifty clams fine and drain off in a colander all the liquor that will come away. Mix this in a bowl with a cupful of crushed cracker, half a cupful of milk, two beaten eggs, a tablespoonful of melted butter, half a teaspoonful of salt, a pinch of mace and the same of cayenne pepper. Beat into this the chopped clams and fill with the mixture clamshells or the silver or stone china shell-shaped dishes sold for this purpose. Bake to a light brown in a quick oven and serve in the shells. Send around sliced lemon with them.

FRUIT PUDDING.—Six large apples pared and chopped, six large spoonfuls of grated bread crumbs, six tablespoonfuls of sugar, six of currants, six eggs, a wineglassful of wine, or dissolved jelly, a teaspoonful of extract of nutmeg, cinnamon and cloves, quarter of a pound of butter, and three tablespoonfuls of flour. Put in a pudding mould or small tin bucket, and boil three hours.

ICE CREAM CANAY.—Two cups of granulated sugar one-half cup of water, add one-fourth teaspoonful of cream tartar dissolved in water, as soon as it boils. Boil about ten minutes; don't stir. When done it will be brittle if dropped in cold water; add butter half the size of an egg just before taking off the stove; pour into a buttered tin to cool, and pull it as hot as possible. Flavor, while pulling, with vanilla, checkerberry or any extract to suit taste.

ORANGE SHORT CAKE.—To one quart of flour add two heaping teaspoonfuls Horsford's baking powder, one tablespoonful white sugar and a little salt; mix thoroughly while dry. Chop up three tablespoonfuls butter in the flour thus prepared. To one large cupful of sweet milk add one egg. Then put the whole together as quickly and with as little handling as possible. Roll into two sheets, each about half an inch thick. Bake in a well-greased pan, laying one sheet on top of the other. When done, and while yet warm, separate them and put between the two crusts a thick layer of sliced oranges; sprinkle plentifully with powdered sugar and serve with thick or whipped cream.

OYSTER TOAST.—Open twelve oysters; put them into a clean saucepan with their own liquor, a quarter of a teaspoonful of white pepper, a wine-glass of milk, two cloves, and a small piece of mace; boil for three minutes. Mix one ounce of butter with half an ounce of flour, put it in small pieces in the pan, stir well, add one teaspoonful of lemon juice, and the same quantity of moist sugar; when nearly boiling, pour the mixture over the toast and serve.

BOOKS AND PAMPHLETS RECEIVED.

MORALS AND ART, by Anthony Comstock. New York. J. S. Ogilvie & Co.

Anthony Comstock has just written a little book on the subject of Morals *vs.* Art, in which he gives facts and figures which all should examine with care. The recent arrests in New York for a violation of the law have created an intense excitement. The book should have a wide circulation.

WIDE AWAKE. An illustrated magazine for the young. Boston: D. Lothrop Co.

The new volume of this brilliantly entertaining and instructive childrens' magazine began with the holiday number, issued in December, and splendid promise is held out of forthcoming attractions during the present year. It seems really a wonder that such a library and picture-gallery can be got together for $2.40 a year—a thousand pages and everything fresh and new—stories, history, travels, biography, sketches, anecdote, adventure, and all instructive as well as entertaining. Two worlds are drawn from to make such provision for the education and pleasure of our children. So high is the best of young people's literature nowadays that we are all of us glad to be young. Many reading people prefer it to what is written for them; for it has the rare merit of being easy as well as good.

ALDEN'S MANIFOLD CYCLOPŒDIA.—We have been accorded an inspection of the earlier portions of a work which promises to be a very useful contribution to literature. It is the "Manifold Cyclopœdia" now issuing from the press of J. B. Alden, 393 Pearl Street, N. Y. It combines the comprehensive features of a Cyclopœdia with the particularity of a dictionary, the intention being to include in it "every word which has a just claim to a place in the language." The best results of all previous encyclopœdias are freely drawn upon in its preparation; the editorial work being conducted by experienced persons skilled in that kind of labor, and the combination of desirable qualities thus effected is offered to the world at the remarkable price of fifty cents a volume, including a neat cloth binding. The work, it is expected, will be completed in thirty volumes, one or more being issued monthly.

PARALYZING PROJECTILES.—"The common form of offensive and defensive weapon at present," said Mr. Edward Weston, the prominent electrician, "is something that will throw a solid or an explosive metal projectile—a solid shot, a shell or a torpedo. Explosive bullets for small arms are tabooed under the laws of war, because they do unnecessary damage, that is, they kill after striking, when the wounds they first cause would be sufficient. It follows that if you could overpower your enemy without either killing or wounding him, that plan would be preferable to any now existing. That is what I believe can be done. It is well known that the nitrite of amyl possesses the power of causing insensibility very quickly in a human being breathing its fumes. The effect is equivalent, temporarily, to a paralytic stroke. Now, nitrite of amyl is very cheap and plentiful. I propose to fire shells filled with this chemical instead of gunpowder. It will not be necessary to penetrate a ship. A few gallons of this nitrite dashed on the deck of a war ship would soon render her crew helpless. The most powerful ironclads would be even more vulnerable than the light cruisers, for they would be sucking down great draughts of air through their artificial ventilators, and the odor would thus rapidly permeate the whole ship. The whole crew being rendered helpless for an hour or two, the ship could, of course, be towed into a safe spot, while the captors ventilated her and removed the insensible men."

RAIN FOLLOWING RAILROADS.—The meteorological phenomena accompanying the building of railroads in Mexico are receiving the attention of scientific men in that country. Recent serious damage done by washouts on the northern section of the Mexican Central Road was due to waterspouts bursting on the track, and it is a curious fact that waterspouts seem to be attracted by the iron track and telegraph wires. Engineers on the line of the Guadalajara branch of the Mexican Central Railway have noted that, as fast as the construction advances, rain follows, and they hold that this is due to the large quantity of steel rails on flat cars which are carried forward as fast as the work of construction permits. The most noticeable fact is that the country is dry in advance of the construction trains, and also behind them for many miles. Rains beat down, as described, in bucketfuls just where the steel rails are, but only in circles a few miles in diameter.

SUBSTITUTE FOR GUM ARABIC.—A substitute for gum arabic, which has been patented in Germany and is likely to be largely used for technical purposes now that good gum arabic is so scarce, is made as follows, according to the *American Druggist:* Twenty parts of powdered sugar are boiled with seven parts of fresh milk, and this is then mixed with fifty parts of a thirty-six per cent. solution of silicate of sodium, the mixture then being cooled to 122° Fahr. and poured into tin boxes, where granular masses will gradually separate out, which look very much like pieces of gum arabic. This artificial gum copiously and instantly reduces Fehling's solution, so that if mixed with powdered gum arabic as an adulterant its presence could be easily detected. The presence of silicate of sodium in the ash would also confirm the presence of adulteration.

BEER ANALYSES.

RESULT OF THE RECENT GOVERNMENT EXAMINATIONS.

The United States Department of Agriculture, Division of Chemistry, has just issued its Bulletin No. 13 on Foods and Food Adulterants, from which we quote the analyses of beer, comprising 32 samples, these being about all the different varieties of beer of domestic manufacture obtainable in Washington. The samples were all purchased in that city, and included the various popular brands made in Milwaukee, Cincinnati, Philadelphia, New York, etc., which are sold all over the country as well as the product of the few local brewers.

ANALYSES OF MALT LIQUORS BY UNITED STATES DEPARTMENT OF AGRICULTURE.

Designation.	Manufactured in—	Serial Number.	Number of Analysis.	Specific Gravity.	Alcohol by weight.	Alcohol by volume.	Extract.	Original Gravity.	Ash.	Reducing sugar as Maltose.	Dextrine.	Albuminoids.	Free Acids as Lactic.	Phosphoric Acid.	Carbonic Acid.	Remarks.
					Pr.Ct.	Pr.Ct.	Pr.Ct.		Pr.Ct.	Pr.Ct.	Pr.Ct.	Pr.Ct.	Pr.Ct.	Pr.Ct.	Pr.Ct.	
Lager beer, bottled	Milwaukee, Wis.	4800	1	1.0100	4.28	5.39	4.18	1.0505	.196	1.10	1.57	.511	.057	.065	.411	
Export beer, bottled	" "	4801	2	1.0140	4.42	5.55	5.40	1.0537	.309	1.06	2.63	.400	.057	.056	.300	Salicylated.
Lager beer, bottled	Alexandria, Va.	4802	3	1.0171	4.55	5.71	5.71	1.0607	.355	2.04	2.21	.681	.074	.091	.489	Salicylated.
" " "	Washington, D. C.	4803	4	1.0143	4.18	5.24	5.05	1.0533	.388	1.25	0.98	.669	.059	.086	.415	
" " "	Cincinnati, Ohio	4804	5	1.0100	5.53	6.94	4.55	1.0628	.240	0.94	2.25	.513	.073	.082	.328	
Export beer, bottled	St. Louis, Mo.	4805	6	1.0178	4.40	5.47	6.15	1.0590	.312	2.14	2.54	.463	.067	.074	.471	Salicylated.
Lager beer, bottled	Philadelphia, Pa.	4806	7	1.0147	4.29	5.39	5.22	1.0549	.241	1.46	2.30	.538	.078	.071	.717	Salicylated and soured.
" " "	" "	4807	8	1.0147	4.35	5.47	5.09	1.0549	.272	1.37	1.80	.738	.080	.104	.219	
"Budweiss" beer, bottled	" "	4808	9	1.0181	4.52	5.63	5.94	1.0609	.241	2.14	2.57	.531	.086	.078	.324	
Lager beer, draft	Buffalo, N. Y.	4810	10	1.0241	3.84	4.78	7.05	1.0601	.222	2.81	3.09	.519	.035	.069		
" " "	Philadelphia, Pa.	4811	11	1.0132	4.36	5.47	4.63	1.0539	.265	1.17	1.82	.636	.046	.095		Substitutes for hops used.
" " "	Washington, D. C.	4812	12	1.0146	4.29	5.39	5.18	1.0545	.236	1.22	2.21	.669	.044	.086		
" " "	Cincinnati, Ohio	4813	13	1.0169	4.63	5.78	5.86	1.0607	.235	2.37	2.29	.456	.074	.085		
" " "	Alexandria, Va.	4814	14	1.0137	4.71	5.86	4.91	1.0585	.263	1.10	2.40	.619	.008	.089		Bicarbonate of soda used.
" " "	Washington, D. C.	4815	15	1.0140	4.30	5.39	4.83	1.0538	.262	1.49	1.45	.681	.071	.087		Sulphite used.
" " "	" "	4816	16	1.0181	3.86	4.85	5.62		.312	1.52	2.59	.619	.000	.083		Bicarbonate of soda added.
Pale lager beer, bottled	St. Louis, Mo.	4817	17	1.0178	4.28	5.39	4.64	1.0527	.183	2.17	2.75	.463	.067	.064	.629	Salicylated.
"Erlanger" beer, bottled	" "	4818	18	1.0203	4.68	5.86	6.82	1.0650	.212	2.51	2.58	.675	.046	.093	.344	
Ale, bottled	Philadelphia, Pa.	4819	19	1.0059	6.24	7.74	3.46	1.0647	.401	0.59	0.90	.531	.232	.085		
Bass' Pale Ale, bottled	England	4820	20	1.0095	5.66	7.09	4.42	1.0623	.309	0.49	2.20	.500	.117	.056	.503	
English porter, bottled	"	4821	21	1.0147	6.13	7.66	5.90	1.0738	.371	0.57	2.76	.763	.151	.049	.397	
Lager beer, bottled	Boston, Mass.	4822	22	1.0077	5.30	6.63	3.94	1.0587	.328	1.06	1.63	.556	.107	.065		
"Kaiser" beer, bottled	Bremen	4823	23	1.0036	5.38	6.71	3.05	1.0543	.162	0.69	1.36	.263	.089	.045		Salicylated.
"Verzandt" beer, bottled	Bavaria	4824	24	1.0197	3.86	4.85	6.24	1.0553	.190	1.71	3.32	.419	.085	.073		
Export beer, bottled	Milwaukee, Wis.	4825	25	1.0150	4.59	5.71	5.38	1.0581	.194	1.87	2.46	.425	.071	.059		Salicylated.
Ale, draft	Philadelphia, Pa.	4826	26	1.0171	5.25	6.55	6.02	1.0669	.331	1.49	2.80	.569	.094	.057		
Ale, bottled	Reading, Pa.	4827	27	1.0125	6.92	8.63	5.55	1.0781	.472	0.93	1.99	.731	.382	.077	.441	
Porter, bottled	" "	4828	28	1.0239	4.89	6.10	8.19	1.0736	.412	2.67	2.88	.763	.166	.100	.592	
"Select" beer, bottled	Milwaukee, Wis.	4842	29	1.0183	4.22	5.32	5.88	1.0570	.193	1.88	2.82	.419	.061	.059		
Export beer, bottled	" " "	4843	30	1.0183	4.22	5.32	5.84	1.0567	.223	1.75	3.12	.413	.053	.058	.242	
"Bohemian" beer, bottled	" " "	4844	31	1.0183	4.16	5.24	5.88	1.0563	.224	1.82	3.04	.406	.071	.057		
"Bavarian" beer, bottled	" " "	4845	32	1.0187	5.06	6.32	6.26	1.0660	.346	1.75	2.87	.556	.074	.077	.265	
*Average (28 samples)				1.0161	4.63	5.79	5.53	1.0597	.279	1.65	2.33	.563	.082	.077	.398	

*In the averages the five samples of foreign beer were omitted.

"WHAT'S KILLING US?"

THE WONDERS WHICH THE MICROSCOPE REVEALS.

One of the leading scientific publications states that many people are now using the microscope to discover the real cause of disease in the system, and to detect adulterations of food and medicines.

This wonderful instrument has saved many a life. A microscopical test shows, for instance, the presence of albumen, or the life of the blood, in certain derangements of the kidneys, but medicine does not tell us how far advanced the derangement is, or whether it shall prove fatal.

The microscope, however, gives us this knowledge:

Bright's disease, which so many people dread, was not fully known until the microscope revealed its characteristics. It greatly aids the physician, skilled in its use, in determining how far disease has advanced, and gives a fuller idea of the true structure of the kidney.

A noted German scholar recently discovered that by the aid of the microscope, the physician can tell if there is a tumor forming in the system, and if certain appearances are seen in the fluids passed, it is proof positive that the tumor is to be a malignant one.

If any derangement of the kidneys is detected by the microscope, the physician looks for the development of almost any disease the system is heir to, and any indication of Bright's disease, which has no symptoms of its own, and cannot be fully recognized except by the microscope, he looks upon with alarm.

This disease has existed for more than 2,000 years. It is only until recently that the microscope has revealed to us its universal prevalence and fatal character. Persons who formerly died of what was called general debility, nervous breakdown, dropsy, paralysis, heart-disease, rheumatism, apoplexy, etc., are now known to have really died of kidney disease, because, had there been no disorder of the kidneys, the chances are that the effects from which they died would never have existed.

As the world becomes better acquainted with the importance of the kidneys in the human economy by the aid of the microscope, there is greater alarm spread through the communities concerning it, and this accounts for the erroneous belief that it is on the increase.

As yet neither homeopathist nor allopathist is prepared with a cure for deranged kidneys, but the world has long since recognized, and many medical gentlemen also recognize and prescribe Warner's safe cure for these derangements, and admit that it is the only specific for the common and advanced forms of kidney disorders.

Formerly the true cause of death was discovered only after death. To-day the microscope shows us, in the water we pass, the dangerous condition of any organ in the body, thus enabling us to treat it promptly and escape permature death.

As the microscope in the hands of laymen has revealed many diseases that the medical men were not aware of, so that the preparation, like many other discoveries in medicine and science, was found out by laymen, outside the medical code; consequently it comes very hard for medical men to indorse and prescribe it. Nevertheless, Warner's safe cure continues to grow in popularity and the evidences of its effectiveness are seen on every hand.

Some persons claim that the proprietors should give the medical profession the formula of this remedy, if it is such a "God-send to humanity," and let the physicians and public judge whether or not it be so recognized.

We, however, do not blame them for not publishing the formula, even to get the recognition of the medical profession. The standing of the men who manufacture this great remedy is equal to that of the majority of physicians, and the reason that some doctors give for not adopting and prescribing it—viz.: that they do not know what its ingredients are—is absurd.

Mr. Warner's statement—that many of the ingredients are expensive, and that the desire of the unscrupulous dealer or prescriber to realize a large profit from its manufacturer by using cheap and injurious substances for those ingredients would jeopardize its quality and reputation; and that Warner's safe cure cannot be made in small quantities on account of the expensive apparatus necessary in compounding these ingredients—seems to us to be a reasonable and sufficient one.

The universal testimony of our friends and neighbors, and the indisputable evidence that it, and it alone, has complete mastery over all diseases of the kidneys, is sufficient explanation of its extraordinary reputation, and conclusive proof that it is, perhaps, the most beneficient discovery known to scientific medicine since the microscope revealed to us the all-important nature of the organs it is designed to reach and benefit.

HOW PILLS ARE MADE.

The custom of taking medicine in the form of pills dates far back in history. The object is to enable us to swallow easily in a condensed form disagreeable and nauseous, but very useful, drugs. To what vast dimensions pill taking has grown may be judged when we say that in England alone about 2,000,000,000 (two thousand million) pills are consumed every year). In the United States the consumption is larger, but statistics are wanting. In early days pills were made slowly by hand, as the demand was comparatively small. To-day they are produced with infinitely greater rapidity by machines especially contrived for the purpose, and with greater accuracy, too, in the proportions of the various ingredients employed.

No form of medication can be better than a pill, provided it is intelligently prepared. But right here occurs the difficulty. Easy as it may seem to make a pill or a million of them, there are really very few pills that can be honestly commended for popular use. Most of them either undershoot or overshoot the mark. As everybody takes pills of some kind, it may be well to mention what a good, safe, reliable pill should be. Now, when one feels dull and sleepy, and has more or less pain in the head, sides and back, he may be sure his bowels are constipated, and his liver sluggish. To remedy this unhappy state of things there is nothing like a good cathartic pill. It will act like a charm by stimulating the liver into doing its duty, and ridding the digestive organs of the accumulated poisonous matter.

But the good pill does not gripe and pain us, neither does it make us sick and miserable for a few hours or a whole day. It acts on the entire glandular system at the same time, else the after-effects of the pill will be worse than the disease itself. The griping caused by most pills is the result of irritating drugs, which they contain. Such pills are harmful, and should never be used. They sometimes even produce hemorrhoids. Without having any particular desire to praise one pill above another, we may nevertheless name Dr. J. C. Ayer's Cathartic Pills, manufactured by the J. C. Ayer Co., Lowell, Mass., and sold by all druggists throughout the world, as the only one we know of that actually possesses every desirable quality. They remove the pressure upon the brain, correct the liver, and cause the bowels to act with ease and regularity. They never gripe or produce the slightest sickness of the stomach, or any other unpleasant feeling or symptom. Neither do they induce further constipation, as nearly all other pills do. As a further and crowning merit, Dr. Ayer's Pills are covered with a tasteless and harmless coating, which causes them to resemble pearls, thus rendering them as pleasant to the palate as they are effective in curing disease. If you have a severe cold and are threatened with a fever, with pains in the head, back and limbs, one or two doses will break up the cold and prevent the fever. A coated tongue, with a brackish taste in the mouth, is caused by foul matter in the stomach. A dose of Ayers' Pills will effect a speedy cure. Oftentimes partially decayed food in the stomach and bowels produces sickness, nausea, etc. Cleanse the bowels with a dose of these pills, and good health will follow.

Unlike many kinds of pills, they do not make you feel worse before you are better. They are, without doubt, the best family physic ever discovered. They remove all obstructions to the natural functions in either sex without any unpleasant effects.

FINANCIAL AND INDUSTRIAL.

STARCH.

One of the largest manufacturers of starch in the United States, is the American Glucose Company. Mr. Graves, who has charge of the starch department, was brought up in the business from a boy, by one of the most progressive and successful starch manufacturers of the country. He therefore had the benefit at all times, of the latest discoveries in the art of its manufacture, and since leaving the house in which he was educated to the business, some twelve years ago, has been untiring in his study and experiments in connection with the manufacture of this article. As a result, he has made more valuable discoveries than any other man in his line of business, and this starch is manufactured by the most approved methods. The very flattering reception with which the goods have met in the past two years, and the inability of this company with its former plant, to supply even a large portion of the demands made upon it for these goods, has led the American Glucose Company to triple its facilities for the manufacture of starch within the last twelve months, and it is now in a position, we believe, to manufacture as large a quantity of starch per diem, as the oldest or largest factory in the country. The American Glucose Company, in the entire business conducted at Buffalo, consumes over 10,000 bushels of corn per day, and the large purchases in all sections of the country, necessary to supply this large quantity, gives it the opportunity to select from a very large number of carloads of corn, the best and the most perfect for the starch business, and also enables it, without asking a higher price for its goods, to use for the Graves starch the best quality of corn grown. The improved machinery and process enables it to entirely eliminate everything which could be in the least detrimental to health or fabrics. It is the experience of all who have used the starch in the laundry, that the same weight of starch will suffice to starch a greater number of pieces than that of any other brand. While the corn starch, prepared for culinary purposes, produces the finest and most delicious puddings and cake of any similar article on the market. The Fifth Avenue Hotel, of New York, has long confined its purchases of starch, both for laundry and table use, to this brand, and, in fact, we are informed that no one who has ever used it on the table, will afterward have any other.

THE "BEST" TONIC.

WASHINGTON, D. C., *Janury* 23, 1888.

Messrs. PHILIP BEST BREWING CO.

Gentlemen: I have used your "Best" Tonic for about a month, and find that it has done me a great deal of good in connection with the cod liver oil.

I have been suffering for the past two years with consumption on the bowels, but was able to work nearly all the time until last May, when I had to stop work and was at home for two months. Worked again until October, when I again quit work, and was compelled to go to bed, getting worse every day, until about the middle of December, when I commenced the use of the "Best" Tonic in connection with the emulsion. Previous to its use I was not able to eat any solid food, not even as much as a cracker or a small piece of bread. After using the first bottle, I found a marked improvement and commenced to get an appetite, eating more every day, and was able to come down stairs for the first time in seven weeks, on Christmas day. Two days after Christmas I weighed ninety (90) pounds, and in two weeks after I again weighed, and bore down the scale at one hundred and six (106) pounds, a gain of sixteen (16) pounds. I have not weighed since, but I am feeling much better and am able to work again.

I can recommend it to anyone suffering from the same disease. I still use it and shall continue its use.

I am, very respectfully yours,

HARMAN MARTIN,
433 R Street, N. W.,
Washington, D. C.

MAKE A START IN LIFE

by taking hold of the live business of a live house. You do not have to put in capital, but are started free. Anyone can do the work. You can live at home if you like. Both sexes, all ages. $1 per hour and upwards easily earned. No special ability or training needed. Let us show you all at once, and then if you don't take hold, why, no harm is done. Address Stinson & Co., Portland, Maine.

BOVININE.

Dr. I. N. Love, of St. Louis, in an article on diet in infantile diseases, published in the St. Louis *Medical Review*, says: "As an aid to the nutrition of the child, whatever be the form of food given, I have found great satisfaction in the administration of a raw liquid meat food known as bovinine. In the most delicate conditions of the alimentary canal, in all stages of innutrition from the most light down to even typical cases of marasmus, I have given the bovinine in doses ranging from five drops to a teaspoonful diluted with five or six times the amount of water, every two to four hours, with marked benefit. We often have to discontinue all milk food, and in such cases I have given the bovinine for weeks at a time exclusively. I consider it an invaluable aid in these infantile cases, as well as in all forms of wasting disease of adult life. I base my conclusions upon practical observation in a large number of patients and favorable experience in my own family.

BROMO-SODA.

During several voyages up and down the Pacific coast, I cured and relieved a score or more cases of seasickness with (Warner & Co's.) Bromo-Soda. In my own case, while formerly always sick at sea, thanks to bromo-soda, I now am never troubled in that way, and thus I am enabled to enjoy to the fullest degree, an ocean trip. This is not a mere letter of recommendation, but one of gratefulness. I trust my professional brothers may give it a trial when opportunity presents.

C. C. VANDERBECK, M. D., Ph. D.,
San Francisco, Cal.

PHŒNIX BOTTLING COMPANY.

This company, having reduced prices on their Extra Champagne and Royal Export Lager Beer as well as on their East India Pale Ale and Extra American Stout, as they inform us, to meet the prices of competitors, we have been asked the question if they have reduced the quality of their goods, to enable them to sell cheaper. We did not believe they had, but nevertheless we have had an examination made of their product, and find that the quality and purity remains the same.

TABASCO PEPPER SAUCE.

The demand for this most excellent condiment is steadily increasing, and no doubt this is due to the fact that, when it has once been used it is never given up, for there is no substitute either in flavor or strength for the Tabasco liquid pepper.

Thousands have quit tobacco by using that delicious chewing gum, Colgan's "Taffy Tolu." It makes a healthy mouth and sound digestion. Always get Colgan's.

VIBURNUM COMPOUND.

Many thousands of physicians who have had an opportunity to observe the action of Viburnum Compound, speak in the highest terms of its efficacy in their practice.

"We are better alone than with a fool." He is *no* fool who says CRYSTAL BLUE is the best..

If you would delight sweetheart, family, friends, take home a box of Colgan's "Taffy Tolu." It is not only delicious, but highly beneficial.

COREY'S MEXICAN RHEUMATIC REMEDY.

This is one of those ready-made preparations, introduced by a regular physician, who had been himself the victim of rheumatism, and vainly endeavored to get relief. Becoming possessed of the formula, he tried it on himself, and having succeeded in relieving himself, he put it on the market for the help of others. The greatest argument for it is, the confidence of its makers, the Ideal Medicine Co., who sent out sample bottles large enough for a fair trial, free of charge. The formula of this remedy having been made known to us, we can safely state that there is nothing of an injurious nature contained therein.

SPEED OF A SNAIL.—"Snail's pace" is no longer an indefinite term. It has been ascertained that a snail can crawl a mile in fourteen days.

A LEADING LAWYER AND BANKER.

HENRY BISCHOFF, JR.

One of the most talented and enterprising gentlemen connected with the New York Bar is Henry Bischoff, Jr., Esq., who has commodious offices in the elegant Stewart building at the corner of Broadway and Chambers Street. He is a native of New York, where he was born August 16, 1852. He attended the public schools and made great proficiency in his studies and was a great favorite with his fellow pupils. At sixteen years of age he commenced the study of law with J. H. & S. Picker the well-known and celebrated lawyers of a former day. In 1869 he entered Columbia Law School, from which he graduated in 1871 with the degree of LL.D. He was then nineteen years of age. He was admitted to the Bar in 1873. He is a gentleman of marked ability and self-possession, is a close student and is thoroughly proficient in the general principles of the common law and also familiar with statutory enactments. His specialties in law matters are real estate, commercial issues and contested wills and he has been very successful in cases of this description. He has a large and constantly increasing clientage and most of his business is of an important character.

Mr. Bischoff is also a banker and he is a member of the old established and reputable banking house of Henry Bischoff & Son, with commodious offices at Tryon Row, and they transact a very large business both on domestic and foreign account and have close connection with many eminent European banking houses.

Mr. Bischoff is a member of the New York State Bar Association, the American Bar Association, the Lotus Club, German Society, Liederkranz, Arion and Beethoven Societies and he is also a prominent member of Tammany Hall.

A REPRESENTATIVE COFFEE DEALER.

The saying is that all roads lead to Rome, but on this side of the Atlantic it should read all roads lead to New York, where the active brain and intelligence of able and representative men in finance, trade, the law and in fact all pursuits and professions are represented in the American Metropolis by capable men. In this meritorious number the name of Mr. Gabriel S. Kutz is quite prominent. He is a New Yorker by birth. Since the organization of the Coffee Exchange he has been conspicuous as one of the principle brokers on the floor of said Exchange, and also has an efficient corps of employés. He is keen, enterprising and indomitable, and is on the high road to fortune. He is very popular with the members and business men generally. He is a good liver; but the delights of the palate do not restrict his activity as a business man. He is a gentleman of fine physic and he is social, courteous and very agreeable.

He makes very few mistakes, is thoroughly posted respecting coffee and has an abiding confidence in the future of the market and the growth and greatness of the Exchange. He has for a considerable time urgently favored more commodious quarters for the Exchange, and he may be classed with the "progressives" in opposition to the "old fogies."

It would not be too wide of the mark to predict that there is a bright future in store for Mr. Kutz in connection with the coffee trade. No one would be envious of his success for he is very liberal and kindly disposed toward persons with whom he comes in contact in a business way.

INCREASE OF BLINDNESS.—According to Dr. Lucien Howe, who read a paper on the increase of blindness in the United States at the last meeting of the American Association for the Advancement of Science, the population of this country increased 30 per cent. from 1870 to 1880, and blindness increased, during the same period, 40 per cent., until now we have with us 50,000 blind. Contagion and immigration are set down as among the chief causes.

THE NEXT GOVERNOR OF CONNECTICUT.

The time is fast approaching when a governor must be selected for the State of Connecticut, and the question is already being agitated, and opinions are freely expressed in favor of several respective candidates for that position.

The majority of intelligent people of all classes of the community favor the selection of the present efficient and indefatigable Governor, the Hon. P. C. Lounsbury, who has during his brief term of office shown statesmanlike qualities of a high order, which has won him golden opinions from the conservative men of the respective parties. He is undoubtedly the strongest of all the candidates and his honorable character is above reproach. He is able, popular, self reliant and possesses a ready tact that has favored him in many an emergency, whether political or otherwise. When he run for governor a few months since the most surprising results ensued. He not only carried his own senatorial district, but also his congressional district, both of which had previously been strongly Democratic. Besides, he carried Fairfield County for the first time that it ever went for a Republican Governor, and these facts furnish abiding evidence of his high standing among his friends and neighbors.

Mr. Lounsbury is a director and stockholder in the Exchange National Bank, at No. 257 Broadway, New York, and he bore the reputation among financial men of being one of the most active, influential and shrewdest officials that ever occupied its presidential chair. The bank is one of the most solid and ably managed institutions in the country.

Mr. Lounsbury is an influential member of the Grand Army of the Republic and is a commander of one of its posts, and he is a favorite with the soldiers.

Mr. Lounsbury was for several years one of the most extensive shoe manufacturers in South Norwalk, Conn., and still resides in Richfield, his native town, where he owns valuable property. He is a most courteous, ready and far-seeing man, is possessed of sterling integrity, a great fund of general intelligence, and executive capacity of the highest standard.

DYNAMITE FOR BUILDING. — Paradoxical as it may seem, the latest thing for which dynamite has been employed is not the blowing up of buildings, but, on the contrary, the laying of their foundations. This new development to due to M. Bonnetond, a French engineer. When a foundation has to be laid in wet ground, he bores a hole from ten to twelve feet deep and an inch and a half wide. Into this hole he passes a string of dynamite cartridges, which are then exploded. Not only is a cavity of a yard wide produced by the explosion, but the expansive force of the dynamite drives the water out far beyond the sides of this cavity, and it does not return again for more than half an hour. In the meantime the workmen clear the cavity and introduce quickly setting concrete, so that when the water returns again it cannot injure the foundation. The method has been put into practice during the building of an *enceinte* at Lyons, and a rapid rate of working is said to have been attained thereby.

THE ARGAND LAMP.—Argand, a poor Swiss, invented a lamp with a wick fitted into a hollow cylinder, up which a current of air was allowed to pass, thus giving a supply of oxygen to the interior as well as to the exterior of the circular frame. At first Argand used the lamp without a glass chimney. One day he was busy in his workroom, and sitting before the burning lamp. His little brother was amusing himself by placing a bottomless oil flask over different articles. Suddenly he placed it upon the flame of the lamp, which instantly shot up the long, circular neck of the flask with increased brilliancy. It did more; for it flashed into Argand's mind the idea of the lamp chimney, by which his invention was perfected.

A SIGNIFICANT CONJUNCTION.—Some lugubrious religious crank has been plastering the rocks along the Hudson River with the words in white paint, "Prepare to meet thy God." And with an unconscious humor he has occasionally placed this statement after the name of some patent medicine, so that the traveler reads it as follows: "Use Killem's Disease Annihilator—Prepare to meet thy God."

RAILROAD IMPROVEMENTS.—Among the recent railway inventions which have attracted special attention is what is termed the anchor brake, to be used in cases of emergency. The plan involved in this case is that of having an anchor to drop from the rear end of a train and engage with the ties. Provision for preventing the bending of the ties, under the strain brought upon them, might, it is suggested, be devised as simply as for the axles, and by having a good, long spring to ease the shock when the anchor came to a bearing, in addition to the relief which would come from the draw springs of the entire train without any expense at all, a train might easily be brought to a stop within fifteen or twenty feet, from an ordinary passenger speed, if something did not give way. A more practical invention, perhaps, is that of a car fire extinguisher, in case of derailment or collision. It consists of a tank of water above the stove, with a large pipe extending from it to the inside of the stove, just above the fire; a trap in the bottom of the tank is connected by levers with a series of arms at the bottom of the car, one of these arms extending under each corner of each platform, while another extends down toward the track. In case, therefore, of collision, one of the arms under the platform must be struck first, thus moving the lever, opening the trap, and instantly deluging the fire with water—or in case of derailment, one of the arms hanging down toward the track is struck and operates the lever.

$85 Solid Gold Watch Free!

This splendid, solid gold, hunting-case watch, is now sold for $85; at that price it is the best bargain in America; until lately it could not be purchased for less than $100. We have both ladies' and gents' sizes with works and cases of equal value. **ONE PERSON** in each locality can secure one of these elegant watches absolutely **FREE.** These watches may be depended on, not only as solid gold, but as standing among the most perfect, correct and reliable timekeepers in the world. You ask how is this wonderful offer possible? We answer—we want one person in each locality to keep in their homes, and show to those who call, a complete line of our valuable and very useful HOUSEHOLD SAMPLES; these samples, as well as the watch, we send ABSOLUTELY FREE, and after you have kept them in your home for 2 months, and shown them to those who may have called, they become entirely your own property; it is possible to make this great offer, sending the **Solid Gold Watch** and large line of valuable samples FREE, for the reason that the showing of the samples in any locality, always results in a large trade for us; after our samples have been in a locality for a month or two, we usually get from $1,000 to $5,000 in trade from the surrounding country. Those who write to us at once will receive a great benefit for scarcely any work and trouble. This, the most remarkable and liberal offer ever known, is made in order that our valuable Household Samples may be placed at once where they can be seen, all over America; reader, it will be hardly any trouble for you to show them to those who may call at your home, and your reward will be most satisfactory. A postal card, on which to write us, costs but **1** cent, and if, after you know all, you do not care to go further, why no harm is done. But if you **do** send your address at once, you can secure, FREE, AN ELEGANT **$85,** SOLID GOLD, HUNTING-CASE WATCH and our large, complete line of valuable HOUSEHOLD SAMPLES. We pay all express, freight, etc.

Address, STINSON & CO., BOX 356 PORTLAND, MAINE.

SILK AND SATIN RIBBONS FREE!

LADIES, THIS IS FOR YOU!



A rare gift for the ladies. Save much money and secure the best! Every lady knows and appreciates, the privilege of having a few remnants of ribbon, handy for the thousand and one tasty and useful purposes for which such goods are used, and which they, the ladies, use to such advantage. To purchase what is wanted at the usual prices such goods are sold for, would create a large bill of expense, and therefore debars a great many from indulging their tastes in this direction. Realizing that there were thousands upon thousands of remnants of ribbons among the large importing houses of America which they would be willing to dispose of in bulk, for a small fraction of their cost, to any one capable of purchasing largely, we instituted a search, resulting in our obtaining the entire stock of **Silk** and **Satin Ribbon Remnants** of several of the largest of these houses, who imported the finest goods. These goods may be depended upon as superior to anything to be found, except in the very best stores of America. Yet they are given away **free;** nothing like it ever known. A grand benefit for all the ladies; beautiful, elegant, choice goods absolutely **free.** We have expended thousands of dollars in this direction, and can offer an immensely, varied, and most complete assortment of ribbons, in every conceivable shade and width, and all of excellent quality, adapted for neck-wear, bonnet strings, hat trimmings, bows, scarfs, dress trimmings, silk quilt work, etc., etc. Some of these remnants range three yards and upwards in length. Though remnants, all the patterns are new and late styles, and may be depended on as beautiful, refined, fashionable and elegant. **How to get a box containing a Complete Assortment of these elegant ribbons Free. The Practical Housekeeper and Ladies' Fireside Companion,** published monthly by us, is acknowledged, by those competent to judge, to be the best periodical of the kind in the world. Very large and handsomely illustrated; regular price 75 cts. per year. Send **35** cents and we will send it to you for a trial year, and will also send **free** a box of the ribbons; 2 subscriptions and 2 boxes, **65** cts.; 4 subscriptions and 4 boxes, **$1.** One-cent postage stamps may be sent for less than $1. Get **3** friends to join you thereby getting 4 subscriptions and 4 boxes for only $1; can do it in a few minutes. The above offer is based on this fact:—those who read the periodical referred to, for one year, want it thereafter, and pay us the full price for it; it is in after years, and not now, that we make money. We make this great offer in order to at once secure 250,000 new subscribers, who, not now, but next year, and in years thereafter, shall reward us with a profit, because the majority of them will wish to renew their subscriptions, and will do so. The money required is but a small fraction of the price you would have to pay at any store for a much smaller assortment of far inferior ribbons. Best bargain ever known; you will not fully appreciate it until after you see all. Safe delivery guaranteed. Money refunded to any one not perfectly satisfied. Better cut this out, or send at once for probably it won't appear again. Address,

H. HALLETT & CO., PUBLISHERS, PORTLAND, MAINE.

1888. 1888.

THE

American Analyst.

VOLUME FOUR.

THE new Volume now beginning will contain, besides the various Departments which have given such universal satisfaction, several NEW FEATURES of great popular interest and value. Among these will be

EASY LESSONS IN VOLAPUK.

AN EXHAUSTIVE SERIAL TREATISE ON AMERICAN WINES.

FOOD ADULTERATION FROM A NATIONAL STANDPOINT.

THE LARD ADULTERATION QUESTION.

INVESTIGATION OF ALUM BAKING POWDERS.

INFORMATION FOR AMERICAN HOUSEWIVES.

And full discussions of a great variety of practical, economical subjects relating to the household and important to the housekeeper, such as can be found in no other journal in America.

— SUBSCRIPTION, $1.00 PER YEAR.—

ADDRESS:

AMERICAN ANALYST,

No. 19 Park Place,

NEW YORK.

GOLD. You can live at home and make more money at work for us than at anything else in the world. Either sex; all ages. Costly outfit FREE. Terms FREE. Address, TRUE & CO., Augusta, Maine

HAND SEWED SHOES.
MYERS & BARRY.

HAND SEWED SHOES, ... $3 50
TO ORDER, ... $4 00
All grades of French Calf constantly on hand.
123 Roosevelt St. (near the Ferry),
New York.

THURSTON'S IVORY PEARL TOOTH POWDER
WILL KEEP THE TEETH IN PERFECT CONDITION AND THE GUMS HEALTHY.
Price 25 & 50 Cents PER BOTTLE.

UNEQUALLED Ask your Grocer for, and insist on having, LEA & PERRINS' Sauce, "The Worcestershire." It is known throughout the whole civilized world as the Best and most Delicious Sauce. **DELICIOUS.**

SCOTCH MARMALADE, Jams, Fruit and Wine, Jellies, &c.
By James Keiller & Son, Dundee.
SCOTCH BISCUITS, Albert, Water, and Oat Cake,
By Robert Middlemass & Son, Edinburgh.
RACAHOUT des Arabes, by De Langrenier, Paris.
BAY WATER, West India, (J. D. S. brand), in cases, one dozen bottles.
Sold by all first-class Grocers.
JOHN DUNCANS' SONS, 43 Park Place, New York. Agents for the United States.

NEW STAMPING OUTFIT FREE!



OUR COUNTRY HOME, a mammoth 20 page, 80 column Illustrated Paper devoted to ladies' fancy work, home decoration, fashions, housekeeping, stories, and a host of interesting matter for the home, written expressly for its columns by the best known writers in the land. Wishing to introduce it into new homes where it has not already been taken, we make this great offer: Upon receipt of only **25c.**, we will send Our Country Home 3 months, and to every subscriber we will also send free and post-paid, our New 1888 Stamping Outfit. It contains **65** perforated patterns, all entirely new, and designed expressly for this outfit, as follows: 1 Forget-me-not Alphabet, 1½ inches high; 1 magnificent pattern for lustre painting, 17x7 in.; 1 charming landscape, "Our Country Homes," for tapestry painting, 17 in. 1 Pansy spray for Kensington Painting, 9 inches; 1 Border for button hole sketch, 8 in. 1 cluster of Pine Cones, 7¼ in. 1 fine Roman vase, 7 in. 1 spray golden rod, 7 in. 1 gooseberry vine 7 in. 1 beautiful child's head, 6 in. 1 design, tulips, 6 in. 1 spray, oak and acorn, 5¾ in. 1 group dog roses, 5½ in. 1 pretty cracklework design, 5 in. 1 spray lilium longiflorum, 5 in. 1 spray maiden hair fern, 5 in. 1 laurel spray, 5 in. 1 bird on tree, 5 in. 1 design, "Our Dog Hero," 5 in. 1 group fuschias, 4½ in. 1 cup and saucer, 4½ in. 1 spray fruit, 4½ in. 1 flying bird, 4 in. 1 forget-me-not spray 4 in. 1 barbotine vase, 3½ in. 3 bunches daisies, 1 round vase, 1 oblong jar, 1 corner for tray cloth, 1 bunch wild roses, 1 bird singing, 1 monogram design, 2 ferns, 1 bunch cherries, 1 poppy, 1 calla lilly, 1 golden rod, 1 cluster primroses, 1 argus butterfly, 1 box stamping powder, 1 patent poncet, 2 pamphlets, "Instructions for Using the Stamping Outfit," and "Art of Kensington and Lustre Painting," a new book, just out, teaching how to make knitted and crocheted silk purses, and a variety of articles of perforated card board, wall pockets, needle cases, &c., making a magnificent and costly present. Remember, we give the entire outfit described above free to everyone sending **25c.** for three months' subscription to our paper. This is a brand new stamping outfit and must not be confounded with the cheap, catch-penny affairs which are flooding the market. We send five subscriptions and five outfits for **$1.** We guarantee perfect satisfaction or will refund the money to any dissatisfied subscriber. Address, **Publishers OUR COUNTRY HOME, Wallingford, Conn.**

PROTECT YOUR HOMES!
MARLIN DOUBLE ACTION REVOLVER.

A GOOD REVOLVER no longer costs a Fortune



These revolvers are an exact duplicate of the celebrated SMITH & WESSON. .38 Caliber, using Centre-Fire Cartridges.

Self-Cocking, Automatic Ejecting,
FULL NICKEL PLATED, RUBBER HANDLE.
WARRANTED EQUAL IN EVERY RESPECT TO THE
SMITH & WESSON.
For sale by Hardware and Gun Dealers everywhere.
Manufactured by THE MARLIN FIRE ARMS CO., New Haven, Conn.



BEST IN THE WORLD!
MARLIN Magazine Rifle.
For large or small game, all sizes. The strongest shooting rifle made. Perfect accuracy guaranteed, and the only absolutely safe rifle on the market
BALLARD GALLERY, SPORTING AND TARGET RIFLES, world renowned. Send for Illustrated Catalogue. **MARLIN FIRE ARMS CO., New Haven, Conn.**



IDEAL RELOADING TOOLS
WILL SAVE ONE-HALF THE COST OF AMMUNITION.
Made for all sizes of Cartridges which are used in any of the following Rifles or Pistols: Marlin, Colt's, Winchester, Ballard, Stevens, Remington, Whitney-Kennedy, Smith & Wesson; also for all gauges and makes of
SHOT GUN SHELLS, PAPER AND BRASS.
Cheaper and better than any other. Send for Price List of these tools to
Ideal Manufacturing Company,
Box 1064 C. NEW HAVEN, CONN.



OUR MISSION.

WHAT THE AMERICAN ANALYST IS DOING.

FIGHTING ADULTERATION.

The steadily growing favor which the AMERICAN ANALYST is constantly receiving at the hands of both the reading and the business public is the best evidence that could be afforded of the useful field of effort it occupies. It was the pioneer journal in this country to take up the fight against adulteration, and stands to-day, by public acknowledgment, the only competent exponent of the principles involved in that momentous struggle. To this end the realm of sophistication and fraud has been thoroughly explored, and its corruptions, as far as practicable, exposed to the public view. Charlatans, adulterators, and handlers of poisonous food have been summarily and uncompromisingly dealt with. Humbugs seeking to enrich themselves, through the sale of high-sounding specifics for human ailments, have been subjected to the crucial test of thorough chemical analysis of their goods, and where the latter, as too frequently occurred, proved to be utter frauds in name, composition, and pretended effects upon the system, the real facts have been placed before our readers in order to save the public from further unconscious imposition. The veil of chemical mystery in which tricksters of this kind ostentatiously envelop their processes of manufacture, protects them as yet from the criminal laws to which other confidence operators are held amenable, and the only method for counteracting their nefarious schemes is through public exposure by the newspaper press. In exposing this species of fraud, the AMERICAN ANALYST has conferred a benefit upon the community, to which the latter is giving grateful and substantial recognition.

SANITARY AND FOOD REFORMS.

In addition to the foregoing, the AMERICAN ANALYST is in constant co-operation with the Boards of Health of this and other cities, in efforts to secure sanitary and food reforms through organized methods, and while it is nobody's mouthpiece, it is conceded to be the only popular medium through which those bodies can bring their purposes and action intelligently before the general public. Reaching as it does all classes, manufacturers, merchants, physicians, chemists and private families all over the land, its influence is exerted over a vast radius, producing results as visibly marked as they are widespreading.

HOUSEHOLD MATTERS.

"The American Household," edited by Miss Juliet Corson, is a department of special interest to ladies. It is very different and far superior to the ordinary cook book in that it tells the housewife suggestively what to buy, what foods are in season, as well as how to prepare the many varieties of dishes, all in a practical way easily followed. Other matters of great interest to housewives are also discussed.

VOLAPUK.

Among the striking features of this Fourth Volume will be a course of progressive lessons in the new Universal Language, Volapuk, so arranged as to enable our readers to readily instruct themselves in this commercial tongue. This series alone will be found to be worth several times the cost of a year's subscription.

SCIENTIFIC INVESTIGATION.

The business transacted in the office of the AMERICAN ANALYST does not by any means all come to the surface in the pages of the paper. Minute analyses of chemical compounds, careful assays of minerals, examinations of questionable oils or doubtful condiments, and the many subtle operations incident to laboratory work are constantly required of us by correspondents far and near, and the results in many cases are not publicly recorded. In this manner, the influence of the paper encompasses a vast radius, from every point of which we receive constant expressions of approval, verbally, and in more substantial shape.

SUBSCRIPTION $1 PER YEAR.

Considering the amount of practical information regularly embodied in its contents, together with the fact that the subscription price for an entire year is only one dollar we believe the day is approaching when the AMERICAN ANALYST will be regularly welcomed in every intelligent household in the land. Address,

ANALYST PUBLISHING CO.,
19 Park Place, N. Y.

Humorous Column, Edited by S. W. Foss, the well-known contributor to all leading American Humorous Publications.

150,000 READERS EVERY WEEK

Fancy Work Department, Edited by EVA M. NILES, the leading American authority on Fancy Needle Work Designs.

THE YANKEE BLADE

Is now in its forty-seventh year, and is unquestionably the Largest, Brightest, Handsomest and Cheapest Weekly Family Story Paper in America. The publishers of THE YANKEE BLADE are aiming for THE LARGEST CIRCULATION IN AMERICA. With this object in view they make a special offer to new subscribers Send a trial subscription, and be prepared to know what paper to order for the coming year. All who subscribe at once will receive THE YANKEE BLADE 5 weeks for 10 cents; 13 weeks for 25 cents; six months for 50 cents; one year, $1; two years, $1.75. A SUBSCRIPTION FREE for EVERY CLUB OF FOUR NEW SUBSCRIBERS. Don't misunderstand our offer. The regular subscription price of THE YANKEE BLADE is $2, but to introduce our paper everywhere it will be sent ON TRIAL during the continuance of this offer for the special prices named above. THE YANKEE BLADE can be procured through any newsdealer at 5 cents a copy. Remittances should be made in Money Orders, Express Orders, or Registered Letter at our risk. Postal Notes are no safer than bills. Stamps taken (one cent preferred) when more convenient. All Postmasters are required to register letters when requested. Address,

5 WEEKS —FOR— 10 CENTS

The POPULAR AMERICAN WEEKLY.

ON THE YANKEE BLADE TRIAL, ONE YEAR. $1. One Subscription Free for Every Club of Four New Subscribers, And $4.

13 WEEKS —FOR— 25 CENTS

Household Department, Edited by TREBOR OHL. Containing only authorized reports of the Boston Cooking School.

POTTER & POTTER, Pubs, 43 MILK STREET, Boston, Mass.

Fascinating Stories Of Adventure and Travel for Men. Stories of Love and the Family Fireside for the Ladies.

FAT — CORPUS LEAN *will reduce fat at the rate of 10 to 15lbs. per month without affecting the general health.* 6c. *in stamps for circulars covering testimonials.* S. E. MARSH CO., 2315 *Madison Sq., Philadelphia, Pa.* — MADE — ABSOLUTELY HARMLESS *simply stopping the FAT-producing effects of food. The supply being stopped the natural working of the system draws on the fat and at once reduces weight.* — LEAN

ESTABLISHED 1857.

J. H. CUTTER,

OLD

BOURBON AND RYE WHISKIES.

We are the Sole Owners and Proprietors of this Celebrated Brand of Whiskey.

C. P. MOORMAN & CO. LOUISVILLE, KY.

We Guarantee the Superior Quality and Absolute Purity of every Barrel of Whiskey sold by us under this Brand.

W. P. FESSENDEN, Agent for N. E. States, Maryland and Penn., 11 Central St., Boston.

THE OLDEST.

THE GENUINE EAU DE BOTOT BOTOT WATER
THE ONLY DENTIFRICE APPROVED BY THE ACADEMY OF MEDICINE OF PARIS, FRANCE.



FOR MORE THAN A CENTURY IN GENERAL USE IN EUROPE.
SOLE AGENT FOR THE UNITED STATES, FREDERIC REISET, 44 BEAVER STREET, NEW YORK.

THE BEST.

SEND YOUR WIFE THE American Analyst.

$1.00 A YEAR.

CURE FOR THE DEAF

PECK'S PATENT IMPROVED CUSHIONED EAR DRUMS **Perfectly Restore the Hearing**, and perform the work of the natural drum. Invisible, comfortable and always in position. All conversation and even whispers heard distinctly. Send for illustrated book with testimonials FREE. Address or call on

F. HISCOX, 853 Broadway, N. Y.

Mention this Journal.

ESTERBROOK'S STEEL PENS

Leading Numbers 14,048,128 130, 135, 333, 161.



For sale by all stationers.

THE ESTERBROOK STEEL PEN CO., 26 John St., N. Y.
Works: CAMDEN, N. J.

ESTABLISHED 1835.

CORNWALL & BROTHER

—) FINE (—

Milled, Toilet and Laundry

SOAPS AND CANDLES,

LOUISVILLE.

CARNRICK'S SOLUBLE FOOD

FOR INFANTS AND CHILDREN.

For Mothers, Invalids, Dyspeptics & Aged People.



THE ONLY FOOD *that digests as easily as human milk, and agrees with all infants and children.*

THE ONLY FOOD *that thoroughly nourishes the child without the addition of cow's milk.*

THE ONLY FOOD *that removes from infancy all necessity, danger and annoyance of a wet nurse.*

TAKEN BY MOTHERS *once or twice a day the quantity of milk will be increased and quality at once improved.*

IF THE CHILD IS RESTLESS, *change partially from nursing to* **SOLUBLE FOOD.**

DR. STUTZER, Food Analyst for Rhenish Prussia, says: "CARNRICK'S SOLUBLE FOOD is the best of all the foods I have ever examined."

"OUR BABY'S FIRST AND SECOND YEARS," by Marion Harland. Book of 64 pages, giving careful instructions for bringing up the little ones. Sent free by

REED & CARNRICK, N. Y.

ARMOUR & CO.

CHICAGO, ILLS.

PACKERS OF

Pork and Beef Products

CANNED MEATS,

ETC.,

FOR HOME CONSUMPTION AND FOR EXPORT

TO ALL PARTS OF THE WORLD.

Also,

SHIPPERS OF

Choice Dressed Beef,

MUTTON AND HOGS,

In Refrigerator Cars,

To BOSTON,

NEW YORK,

PHILADELPHIA,

BALTIMORE,

And other cities throughout the country.

NATRONA BI-CARBONATE OF SODA.

(ABSOLUTELY PURE.)

NATRONA



TRADE MARK

SODA

The nature of the raw material from which NATRONA BI-CARBONATE OF SODA is made—viz., kryolith, a mineral containing *pure sodium*—insures a purity and uniformity of product which cannot be obtained from any other known material. In making BI-CARB. SODA from any other raw material, the use of sulphuric acid is a necessity, but none is used in any part of the process of making NATRONA BI-CARB.; hence its entire freedom from the slightest trace of arsenic, which is always present in ordinary soda. Its absolute purity and entire freedom from all traces of *sulphate of soda*, common salt and other impurities, render NATRONA BI-CARB. NEARLY TASTELESS, and being bolted through the finest bolting-cloth, insures the finest stage of division.

To these indisputable facts the attention of CONSUMERS of soda is specially called. They are IMPORTANT, and should influence both those who use and those who sell soda, to buy and sell NONE BUT THE BEST.

The NATRONA BI-CARB. Soda is kept in stock by almost every wholesale druggist and grocer throughout the United States, of whom it may be ordered.

Natrona Bi-Carb. Soda is unequaled by any other brand of English or American Manufacture.

PENNA. SALT MANUFACTURING CO.,

NATRONA CHEMICAL WORKS. PHILADELPHIA, PA.

RHEUMATISM

is a blood disease and *Corey's Mexican Remedy a positive cure.* Purely vegetable. Not a case of failure known. So strong is our faith, we will send one bottle to any sufferer *free.* Address

THE IDEAL MEDICINE CO., 19 Park Place, New York City.

Established in London, 1831.

DEAN'S PATENT

ARDENTER MUSTARD.

BEST IN THE WORLD.

WARRANTED ABSOLUTELY PURE.



WARRANTED ABSOLUTELY PURE.

Ardenter Mustard Pellets

— FOR —

Dyspepsia and Indigestion.

UNIVERSALLY recommended and prescribed by physicians. The medicinal property are English mustard seed coated with pepsin and sugar. You will find it will relieve you after using two or three doses. It is very beneficial for Heartburn, Sour Stomach and Headache. They are a beautiful confection for children. Each bottle contains full directions.

W. G. DEAN & SON,

361 and 363 Washington Street, 84, 86 and 88 North Moore Street, New York.

Sura Cura ROBINSON'S SURE CURE FOR

RHEUMATISM

And NEURALGIA,

And remedy for diseases arising from an impure state of the blood. An antidote for **MALARIA.** Price 50 c. and $1. Sent by mail on receipt of price. Send for Circular.

R. W. ROBINSON & SON,
184 Greenwich Street,
NEW YORK.

Sura Cura



GOLD MEDAL, PARIS, 18[illegible]

BAKER'S

Breakfast Cocoa.

Warranted *absolutely pure Cocoa,* from which the excess of Oil has been removed. It has *three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup.* It is delicious, nourishing, strengthening, easily digested, and admirably adapted for invalids as well as for persons in health.

Sold by Grocers everywhere.

W. BAKER & CO., Dorchester, Mass.



These Goods are "Par Excellence,"

Pure, Healthful and Reliable, warranted to give satisfaction in every particular.

For sale by wholesale and retail grocers throughout the United States. VOUWIE BROS., Manufacturers, CLEVELAND and CHICAGO.

A BUSINESS BENEFIT.

ADVANTAGES TO ADVERTISERS OFFERED BY THE AMERICAN ANALYST.

It has not the limitations of a daily paper. No one reads yesterday's paper. A monthly lives at least a month, while a semi-monthly is fresh twice a month, and its audience is not limited by geographical lines, but the circulation is all over the United States and Canada.

It contains matters of interest to everyone, especially the ladies of the household, and is, therefore, sure of a careful perusal. Our audiences are intelligent and of the better classes, who have money to spend, and any well worded advertisement in our columns, giving real information, will receive a careful perusal.

Our rates are as low as our circulation affords. Large circulation and original matter cost money, and those advertisers who desire to realize these benefits must expect to pay reasonably for them.

Advertisements in our columns are permanent. Most of our subscribers bind their numbers.

Our advertisements are set up in an attractive form, sure to call the attention of the reader.

Anything that our readers want, or for which a demand is to be created, not wholly of a local nature, will pay to advertise with us.

We take only advertisements from legitimate houses of really meritorious goods, and give them all the editorial assistance they deserve; consequently our readers knowing this, have confidence in advertisements contained in our columns.

The fact that we have the best and largest houses in every branch of trade advertising with us, and that they always renew as their seasons arrive, proves beyond a doubt that they have found the AMERICAN ANALYST a good advertising medium. Why should not you?

THE

GILBERT S. GRAVES

Standard Starch,

BUFFALO, N. Y.

IT IS MANUFACTURED WITH ENTIRELY NEW MACHINERY AND BY LATEST IMPROVED PROCESS.

IT IS GUARANTEED to be fully equal to **BRANDS SOLD AT FANCY PRICES**, and **MUCH SUPERIOR TO STARCH SOLD AT EQUAL PRICES.**

THE MIRROR GLOSS

Is the finest Starch made for the Laundry, and cannot be excelled. It will not injure the finest Laces.

THE CORN STARCH

For culinary purposes is prepared with the greatest care, from selected Corn, and is a most delicious and wholesome article of food.

ASK YOUR GROCER FOR IT.

THE LESLIE E. KEELEY CO.



DWIGHT, ILLINOIS.

We solicit an investigation of our system and methods and will gladly send to any one, very interesting reading matter on the OPIUM HABIT, DRUNKENNESS and their effects and cure. Physicians specially invited to examine, and if desirous of trying our remedies, liberal arrangements will be made with them. Prompt and frank attention to correspondence. The remedies are put up safely in stout boxes and sent masked. Full directions sent.

THE LESLIE E. KEELEY CO.,
Dwight, Illinois.

LAST OPPORTUNITY!

For CHEAP EXCURSION To

CALIFORNIA.

$72 from St. Louis via Iron Mountain Route
$60 from Kansas City via Missouri Pacific Ry

Tickets are good for six months, limited to sixty days for going passage with stop over privileges at pleasure within limit of west-bound passage. Special excursion trains leave St. Louis via. Iron Mountain Route, February 16th and Kansas City via. Missouri Pacific Railway, February 17th. ☞ All coupon offices in the United States and Canada will sell tickets to Los Angeles, San Diego and San Francisco for this EXCURSION.

AGENTS WANTED to Canvass for Advertising Patronage. A small amount of work done with tact and intelligence may produce a considerable income. Agents earn several hundred dollars in commissions in a single season and incur no personal responsibility. Enquire at the nearest newspaper office and learn that ours is the best known and best equipped establishment for placing advertisements in newspapers and conveying to advertisers the information which they require in order to make their investments wisely and profitably. Men of good address, or women, if well informed and practical, may obtain authority to solicit advertising patronage for us. Apply by letter to GEO. P. ROWELL & Co., Newspaper Advertising Bureau, 10 Spruce St., New York, and full particulars will be sent by return mail.

DEGREES,

COLLEGE AND HIGH SCHOOL,

Conferred *without residence.* Any one can secure this desirable end by pursuing a course of study by

CORRESPONDENCE

under eminent College Professors, at slight cost.

Those who have left College without graduating should write us for requisite conditions and graduate as soon as possible. Full information of Courses, Professors, Monthy Questions, etc., given in the

UNION READING CIRCLE,

A large 18-page literary Journal, sample copy of which and application form of membership will be mailed to any address on receipt of 10 cts. in postage stamps.

Address COR. UNIVERSITY, BOX O, CHICAGO, ILL.

N. B.—Situations to teach *free* to members and subscribers. Agents wanted.

RAPID, SIMPLE, CHEAP, PERFECT.

TYPEWRITING DUPLICATED,

ON THE

WONDER LITHOGRAPH,

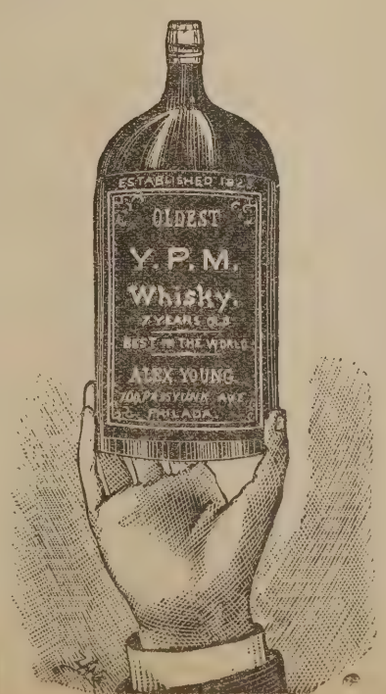
The only SATISFACTORY method of DUPLICATING TYPEWRITING; all copies are perfect *facsimiles* equal to *Photographs*, unlimited in number, printed in any colored printers' ink, at bare cost of paper; also copies drawings, handwriting, etc., equally as well. Send for specimens and circulars, *free.* Address,

THE AMERICAN NOVELTY CO.,
S. W. Corner Clark and Monroe Sts., Chicago, Ill.

LIFE INSURANCE AT ACTUAL COST.

Persons desirous of obtaining life insurance at actual cost, should write for circulars to the SECURITY MUTUAL BENEFIT SOCIETY, No. 233 Broadway, New York.

This Society claims that since its organization, the cost to a member of middle age has been *less than twelve dollars a year* for each thousand dollars of insurance.



ESTABLISHED 1823.

ALEX. YOUNG CO., Limited

DISTILLERS OF

Y. P. M. WHISKIES

DISTILLERY,

Nos. 408, 410, 412 and 414 South Street,

MALT HOUSE,

416, 418, 420, 422 and 424 South Street,

STORE,

No. 700 Passyunk Avenue.

PHILADELPHIA, PA.

CUM HOC SIGNO  COGNITUS EST

LIQUID

PANCREOPEPSINE

(WARNER'S DIGESTIVE FLUID.)

FOR THE CURE OF

DYSPEPSIA AND MALARIA

This preparation contains in an agreeable form the natural and assimilative principles of the digestive fluids of the stomach and duodenum, comprising **Pancreatine, Pepsin, Lactic and Muriatic Acids.** The best means of re-establishing digestion in enfeebled stomachs, where the power to assimilate and digest food is impaired, is to administer principles capable of communicating the elements necessary to convert food into nutriment.

It is usually given in doses of from one to two tablespoonfuls after each meal, with a small proportion of water or wine, or alone, as it is very pleasant and agreeable to the taste.

Put up in Sixteen-ounce French Square bottles, for Physician's prescriptions, and druggists can attach a label with doctor's directions.

WILLIAM R. WARNER & CO.,

1228 Market Street, Philadelphia.

22 Liberty Street, New York.

SUPPLIED BY ALL DRUGGISTS.



The "Best" Tonic

A Concentrated Liquid Extract

OF

MALT AND HOPS.

Invigorating

and

Nutritious.



INSURES

A

Healthy Appetite

—AND—

AIDS DIGESTION.

STRENGTHENS THE SYSTEM.

One of the Most Efficacious Remedies for Dyspepsia.

INDISPENSABLE FOR NURSING MOTHERS. THE MOST WHOLESOME TABLE BEVERAGE.

The "BEST" Tonic is manufactured from the Best Malt and Choicest Hops and neither Alcohol, Spirits nor Chemicals of any kind are used in its preparation.

MANUFACTURED ONLY BY

Specialty Department, **PHILLIP BEST BREWING CO.,**

Eastern Depot, 28 College Place, N. Y.

General Office, - - - - MILWAUKEE, WIS.

J. HENRY HENTZ. J. P. ROBINETT. J. HENRY HENTZ, Jr.

ESTABLISHED 1793.

WHITE, HENTZ & CO.,

SOLE PROPRIETORS OF

Trimble and Pennsylvania Monogram Whiskies.

222 and 224 NORTH SECOND ST., PHILADELPHIA.

D. LIEBER, 17 South William St., New York. Col. H. A. SELIGSON, 1200 Pennsylvania Ave., Washington, D. C.



KING'S

Quick Rising Flour

—AND—

CEREAL FOODS

Are Pure and Wholesome.



King's Quick Rising Buckwheat Flour.
King's Quick Rising Winter Wheat Flour.
King's Quick Rising Graham Flour.
King's Quick Rising Brown Bread Flour.
King's Partly Cooked Rolled Oats.
King's Irish Oatmeal. King's Partly Cooked Rolled Wheat.
King's Cracked Wheat. King's Steel Cut Oatmeal.
King's White Hominy.
King's Corn Grits or Samp.
King's Golden Corn Meal.
King's Silver Meal.
King's Farina.

If you cannot get these Goods of your dealer, order direct from us.

KING & LAMB, Manufacturers,

14 Fifth Avenue, CHICAGO, ILL.

For Sale in New York by H HAHNENFELD, 540 and 767 Third Ave., and 877 Fourth Ave.

Natural Lithia Water.

FARMVILLE LITHIA WATER

FROM VIRGINIA.

—Not only Relieves, but—

CURES

Bright's Disease, Kidney Troubles of all Kinds, Rheumatism, Rheumatic Gout, Dyspepsia, Bladder Troubles, Diabetes, Calculi, Albuminuria. Without Taste or Odor. An Unapproachable Record in Results.

Sold by HAZARD, HAZARD & Co., Fifth Avenue Hotel, and other first-class Pharmacists. Pamphlet free upon application.

FARMVILLE LITHIA SPRINGS CO.,

318 Broadway, New York, and Philadelphia.

ON THE USE OF PURGATIVES.

BY CHARLES A. HOFF, M. D., ST. LOUIS, MO.

Of all preparations contained within the *pharnacopœia,* there are none, apparently, held in higher esteem by mankind than that class of medicines, commonly known as purgatives. The busy practitioner confidently prescribes them with variable frequency, singly and combined, from the date of the writing of his very first prescription to that of his last; and the corner druggist rarely sees a day pass over his head on which he does not greet the customer who has called around to get "something to act upon his bowels." Indeed, the inevitable purgative awaits the tiny baby screaming in its first attack of colic; it is resorted to by the invalid weighted down with years of suffering and disease; and it is by no means despised by the individual in robust health, when assailed by the various petty ills, which even the most vigorous seldom entirely escape.

Notwithstanding the fact that purgatives are so generally prescribed by the physician, and so frequently resorted to without advice by the patient, they are not altogether incapable of doing harm. As everybody knows, the habit of purging the system repeatedly with salines, cholagogues, hydragogues, or drastics, is a most pernicious one; and the physician who fails to exercise a proper care, both in the selection and the administration of cathartics will sooner or later bankrupt the health of his patients as well as his own hard earned reputation.

Constipation is a complication of so many disorders, a symptom of so many diseases that its treatment in different cases depends upon very different considerations. For a simple, ordinary attack, the average doctor has been accustomed to use a simple purge, such as castor oil, sulphate of magnesia, rhubarb, senna, aloes, colocynth, blue pills, etc.; yet in none of these, can it be truly said, has there been found all that could be wished for, even in so simple a matter as a laxative. Where can we find the physician who has not been vexed and annoyed at the complaints of his patients against the purgative medicines he has been accustomed to prescribe. Some people there are who can not or will not swallow pills; many object to the nauseating castor oil; not a few oppose the use of salines since they are disagreeable both in taste and effect; many look upon all resinous cathartics as objectionable on account of their so called heating properties; aloes is objected to in pills and especially in pregnancy; elaterium is said to be excessively harsh and severe, croton oil is known to be dangerous; podophyllin causes an undue amount of griping; blue mass is avoided on general principles; and so on to the end of the chapter.

Fortunately, however, the physician of the present need no longer be placed in a dilemma when called upon to prescribe a preparation free from the faults enumerated in connection with ordinary purgatives. The pharmacist has bravely come to his aid with a formula of incomparable excellence; and this preparation, a combination of "manna, purified cathartic acid and fruit juice," although but recently brought to the notice of the medical world, is, nevertheless, already regarded as a most valuable addition to the resources of medicine.

The happy thought that suggested the combination known as the Rio Chemical Co.'s Acid Mannate justly challenges unlimited admiration and esteem, and has thus far evoked from the profession an almost universal verdict of commendation and praise. Prompt, mild and certain in its action, Acid Mannate may well be considered an ideal remedy in the constipation of pregnancy. Being pleasant to the taste, and continuing its good work without increased dosage, it is pre-eminently adapted to cases of habitual constipation. Indeed, in its wide range of adaptability as an aperient medicine it is impossible to exaggerate its importance, or allude either directly or indirectly to the vast variety of its beneficial, therapeutical properties.

The importance of laxatives is probably nowhere appreciated so much as in the constipation of pregnancy; and it is to this fact, no doubt, more than to any other, that Acid Mannate owes its great popularity and fame among remedial agents. The testimony of thousands of honorable medical gentlemen leading us to believe that, through the beneficent effect of this same elegant formula, constipation need not hereafter, as in the past, be regarded as one of the most troublesome attendants upon gestation. Moreover, the atrocious female pill of unknown composition but of dire effect, which has deluged the drug market for ages, we may consider as having had its day; and it is to be hoped that, since the physician is now in possession of a purgative especially suited to the period of gestation, female life will be less frequently harassed by the ails and aches said to be peculiar to the sex; and that miscarriages, displacements, granular erosions, congestions, headaches, dyspeptic and hypochondriacal attacks, and the whole long train of aches, pains and nervous ills will grow less familiar to the medical profession in the same ratio that the physician increases his familiarity with the actions of Acid Mannate.

A full sized bottle of Acid Mannate will be sent free to any Physician who desires to test it, if he will pay the express charges and mention this Journal, on application to the

RIO CHEMICAL CO.,
St. Louis, Mo

THE FINE COFFEES

ROASTED AND SOLD

BY THE

Schnull-Krag Coffee Co.

are shown by analysis and test, to be equal to any Coffees produced in America. By the superior process of roasting and blending, which is a well guarded secret of the proprietors, they have been able in a short time to place their goods in all the States of the West and North-West; and while it may seem like carrying coals to Newcastle to ship these goods to the markets east of us, yet as they are packed in patent air tight cans, thus preserving the aroma as well as avoiding contamination of the goods with the impure atmosphere, it is not only safe, but in all respects practicable to ship to all points east or west without the risk of having the goods depreciated in transportation. To dealers who are desirous of testing these coffees, they can have them sent on trial, and if at the expiration of sixty days they are not entirely satisfactory, they may be returned at our expense. This coffee is packed in 50 lb. air tight cans. For price list and descriptive circulars, address the Company.

THE SCHNULL-KRAG COFFEE COMPANY,

INDIANAPOLIS, IND.

Tabasco Pepper Sauce

OR LIQUID PEPPER.

Is simply the Pulp of the Ripe Pepper Extracted by Pressure.

The seed of this Pepper was obtained from Central America, and by careful cultivation in Louisiana for many years has been so improved in strength, flavor and aroma, as to have become a new variety of Red Pepper, superior to all others. The pulp is so handled as to retain all the flavor, strength, aroma and color of the ripe fruit, and to keep unimpaired in any climate. It excites the appetite, promotes digestion, and is pronounced, by connoisseurs, to be the finest condiment in the world. For medicinal purposes it recommends itself by its purity, strength and diffusible form.

Manufactured by E. McILHENNY,

NEW IBERIA, LA.

For Sale by all Wholesale Grocers.

SWIFT'S

Choice Chicago Dressed Beef

—AND—

MUTTON.

CAN be found at all times in full supply and at popular prices at the branch houses in all the larger cities and is ***retailed by all first class butchers.***

The trade of all marketmen and meat dealers is solicited for our Wholesale Branch Houses, and the ***public may rest assured*** *that in* ***purchasing our meat*** *from dealers they will* ***always receive the best.***

SWIFT AND COMPANY,

UNION STOCK YARDS,

CHICAGO, ILLS.

PEACOCK'S BROMIDES

(SYR: BROM: COMP: PEACOCK)

NERVE SEDATIVE.

Each fluid drachm represents 15 grains of the Combined C. P. Bromides of Potassium, Sodium, Calcium, Ammonium and Lithium.

USES:—EPILEPSY, and all CONCESTIVE, CONVULSIVE, and REFLEX NEUROSES.

This preparation has stood the test of time and experience, and can be relied upon to produce results, which can not be obtained from the use of commercial bromide substitutes.

DOSE:—One to two FLUID drachms, in WATER, three or more times a day.

PEACOCK CHEMICAL CO., St. Louis.

GORDON & DILWORTH

MANUFACTURING PURVEYORS

Established 1847

ALIMENTARY PRODUCTS

ALL OF OUR PRODUCTIONS BEAR THIS TRADE MARK

WE WILL PROSECUTE ALL INFRINGEMENTS & IMITATIONS







CHOICE DESSERTS

OVER 100 DOMESTIC & FOREIGN FRUITS AND VEGETABLES TRANSMUTED INTO TABLE DELICACIES

PRICES ON PRESERVED FRUITS REDUCED 1ST DEC. 1885

PRESERVED, CANNED & BRANDY FRUITS, FRUIT JELLIES, VEGETABLES, TOMATO CATSUP, SYRUPS & JAMS, SALAD DRESSING, BLACKBERRY BRANDY, MINCE MEAT, PLUM PUDDING, SWEET PICKLES, OLIVES & CAPERS, WINE JELLIES, MARMALADE, SOUPS, SAUCES &c.

SOLD BY THE LEADING GROCERS ON THE AMERICAN CONTINENT.

BOVININE, BUSH'S FLUID FOOD.

Is the ORIGINAL and ONLY preparation of RAW FOOD that does not become putrid and disgusting in a short time.

A MOST WONDERFUL NUTRIENT.

The vital principles of Beef and Mutton concentrated. A highly condensed Raw Food Extract. Acceptable to the most delicate taste and smell. Retained by delicate stomachs that reject all other foods. It assimilates more readily than any other food known to the medical profession. Bovinine under the microscope shows the blood corpuscles in their normal condition strongly marked, while in other foods or extracts this vitally important element is destroyed by the action of heat in cooking.

Containing 26.58 Per Cent. of Soluble Albuminoids,

According to OSCAR OLDBERG, Ph.D., Professor of Chemistry and Toxicology, and Dean of the North-Western College of Pharmacy.

A. L. LOOMIS, M. D., Professor in Medical Department of University of New York, says: "I prescribe Bush's Fluid Food or BOVININE, and prefer it to similar preparations."

J. S. JEWELL, M. D., Chicago, says of Bovinine: "I am delighted with it; it is what I have been looking for these twenty years, and it supplies a want that nothing else has been able to fill."

DRS. WARD and FRED. SMITH, speaking for themselves and their colleagues of the Hospital of St. Barnabas, Newark, say: "Bovinine was readily taken by the patients, was easily retained, and in many cases by stomachs which had rejected all other forms of nourishment. We believe Bovinine contains more nutriment, relative to the bulk, than any other preparation known to the medical profession."

"During the last four months of his sickness, the principal food of my father, General Grant, was Bovinine and Milk; and it was the use of this incomparable food alone that enabled him to finish the second volume of his personal memoirs.—FRED. D. GRANT."

October 1st, 1885.

Carefully prepared from the formula of the late James P. Bush, by the J. P. Bush Manufacturing Co., 44 Third Avenue, Chicago, Ill.

PUT UP IN 6 AND 12 OUNCE SIZES, AT 60c. AND $1.00 PER BOTTLE.

For Sale by all Druggists.

Principal Office, 2 BARCLAY STREET, NEW YORK CITY.

A VALUABLE BOOK FOR NOTHING.

The AMERICAN ANALYST will send to any person who will forward a New Subscription with One Dollar, a copy of

THE FAMILY CYCLOPÆDIA OF USEFUL KNOWLEDGE.



This is unquestionably one of the most interesting, entertaining and instructive books ever published. It is a universal educator for every member of the family circle, filled with useful information from beginning to end, and this information is given in such an attractive and pleasing way that the book is quite as entertaining as it is instructive. It treats of hundreds of subjects of which no man, woman or child who seeks to be well informed can afford to be ignorant, yet of which the masses of people are entirely unlearned. It contains the cream or substance of a dozen ordinary volumes, and is one of the most valuable and useful books a family can have in the house. No living man is so well informed that he may not learn from it. It is a book for the masses, for old and young, rich and poor, and will be read with pleasure and profit by all. It will likewise be found of great value as a work of reference. The book is profusely and elegantly illustrated, and is conveniently divided into departments, as follows: **Biography, History, Natural History, Travels, Manners and Customs, Etc.; The World Illustrated, Useful Arts and Manufactures, Trees, Plants, Fruits, Etc.; Great Inventions, Mining, Wonders of the Sea, Familiar Science, Law for the Masses, Statistical and Miscellaneous.** All the above subjects are fully and ably treated in this valuable book. It is a vast storehouse of useful and entertaining knowledge—unquestionably one of the best and most valuable books ever published in any land or language. No cyclopædia ever heretofore published at twice the cost is to be compared with this book in point of artistic make-up, beauty, and excellence of illustration, and quality of contents. As a holiday or birthday present for any one, nothing more appropriate or acceptable could possibly be selected. THE FAMILY CYCLOPÆDIA OF USEFUL KNOWLEDGE is a large and handsome book of 544 pages, 12mo, printed upon fine paper and elegantly bound in cloth, embellished with artistic designs in black and gold. It contains **Two Hundred and Seventy-three Beautiful Illustrations,** the original cost of which was over $5,000. The book will be sent by mail, post-paid, to any person sending a **New Subscription with One Dollar.** It is as large and handsomely gotten up as books usually sold at $1.50 and $2.00, and in the quality of its contents is worth a dozen ordinary volumes.

ADDRESS ANALYST PUBLISHING CO.,

19 PARK PLACE, NEW YORK.

QUINA-LAROCHE

A STIMULATING, RESTORATIVE AND ANTI-FEBRILE

VINOUS ELIXIR

OF THE THREE CINCHONA BARKS.

A most powerful restorative in all cases where Cinchona is indicated,

As MALARIA, EXHAUSTION, SLOW CONVALESCENCE, GENERAL DEBILITY, Etc.

LAROCHE'S QUINA possesses in the highest degree the restorative and invigorating qualities of Cinchona, which is the best known medicine for giving tone to the digestive organs. It succeeds completely in removing LANGUOR, WEAKNESS, WASTING DISEASES, WANT OF APPETITE, and for FEVER AND AGUE IT IS ONE OF THE BEST SPECIFICS.

FOR SALE BY ALL DRUGGISTS.

E. FOUGERA & CO.,

PARIS, 22 RUE DROUOT. Sole Agents for the United States.

American Analyst,

Published on the 1st and 15th of each month,

At 19 PARK PLACE, NEW YORK.

EUROPEAN AGENCIES.

On file at "American Exchange," 449 Strand, London; and American Exchange," 35 Boulevard Des Capucines, Paris.

SPECIAL PREMIUM OFFER.

For twenty-five new subscribers at $1 each, we will send a Marlin Repeating Rifle, 28-inch octagon barrel, with pistol grip, checkered stock and fore-arm; regular price of which is $26.50.

For thirty-five new subscribers at $1 each, we will send a Ballard Rifle, No. 8, Union Hill, half octagon barrel, with pistol grip, checkered stock and fore-arm, off-hand nickeled butt plate, fine target sights, etc.; regular price of which is $14.

For twelve new subscribers at $1 each, we will send a Marlin Double Action Revolver (Smith & Wesson model), full nickel plated, with rubber handle, 88 calibre; regular price of which is is $11.

All of these are illustrated in the advertisement of the Marlin Fire Arms Co., on another page.

THE ANALYST PUBLISHING CO.,
19 Park Place, New York.

IMPORTANT

TO THE

MEDICAL PROFESSION.

Send your address to THE NEW YORK PHARMACEUTICAL COMPANY, BEDFORD SPRINGS, MASS., for Illustrative Hand-book, **FREE**, containing valuable formula, special directions, and the testimonials of one thousand physicians in favor of the great merits of

HAYDEN'S

Viburnum Compound,

IN FEMALE DISEASES.

Also, the

URIC SOLVENT,

For KIDNEY DISEASES, and complaints arising therefrom.

REFORM GONE MAD.

A DRINK OF WATER AND ITS UNHAPPY SEQUEL.

This is the sort of twaddle, says one of our London exchanges, to which the teetotal press occasionally treats its readers. Is it supposed that the cause of temperance is promoted thereby? The *Temperance Record* for May 12th relates the following anecdote, entitled "A Young Member:" Not long since a gentleman took his family out riding, and, as the day was warm, they became thirsty. As they came near a hotel the father said, "Here is a hotel; we will go in and get a drink," meaning a drink of water. His little boy, a bright little fellow of not quite four years old, quickly exclaimed, "No father, we can't go in there; don't you know we belong to the Band of Hope?" To this a correspondent of the *Brewing Trades Review* has forwarded the following sequel: On reaching the hotel, the father, alighting, requested the landlord (who was much bloated by drink) to supply the party with water. On being asked what he proposed to do for the good of the house, it transpired that the worthy gentleman expected that water would be supplied gratis. The landlord pointing out that he would never be able to make his living this way, it was agreed that the water should be paid for at a penny a glass. It then occurred to the bright little fellow of not quite four, who was a preternaturally sharp little fellow in many ways, that under these grinding conditions they might as well have ginger beer at a penny a bottle. A bottle was accordingly brought. *Part* 3.—*Facilis descensus Averno.* Alas! our happy party did not leave that hotel until they had consumed three bottles apiece of the insidious fluid. All agreed that they had tasted nothing so excellent before. The bright little fellow of not quite four insisted on making a speech and singing several songs in the most questionable taste, while the father became very tearful and maudlin, and finally threw his arms round the landlord's neck and implored him to toss double or quits for the bill. They all remounted and rode away singing choruses and drinking songs, the bright little fellow of not quite four leading the way, and screaming to the astonished wayfarers that they were a party of jolly teetotallers, Lawson for ever! with other appropriate exclamations. *Part* 4.—Before the magistrates, the next day, conclusive evidence was produced to show that the bright little fellow had only partaken of ginger beer; but on analysis of a sample taken from a similar bottle it turned out to be of that kind which contains about eight times as much alcohol as good ordinary beer. The prisoner being under seven, the magistrate discharged him, and recommended his father to judge drinks in future by their merits and not by their names.

MILK.

SOME SUGGESTIONS AS TO HOW TO DRINK IT.

Some complain that they cannot drink milk without being "distressed by it." The most common reason why milk is not well borne, is due to the fact that people generally drink it too quickly. If a glass of it is swallowed hastily, it enters the stomach and then forms in one solid, curdled mass, difficult of digestion. If, on the other hand, the same quantity is sipped, and three minutes, at least, is occupied in drinking it, then, on reaching the stomach, it is so divided that, when coagulated, as it must always be by the gastric juice while digestion is going on, instead of being in one hard, condensed mass, upon the outside of which only the digestive fluids can act, it is more in the form of a sponge, and in and out of the entire bulk the gastric juice can freely play and perform its function. Milk may be rendered more digestible, and, for many, of a more agreeable taste, if prepared by slowly adding a few drops of dilute hydrochloric acid to it, drop by drop, while stirring it at the same time. By this means the curd is broken up, and it is in a more favorable state to be acted upon by the digestive fluids.

The Standard of Excellence.

KINGSFORD'S

OSWEGO

Pure and Silver Gloss



STARCH

KINGSFORD'S

OSWEGO CORN STARCH

FOR

Puddings, Custards, Blanc-Mange, Etc.

THE PERFECTION OF QUALITY.

WILL PLEASE YOU EVERY TIME.

Always ask your Grocer for these goods.

COLDEN'S LIQUID BEEF TONIC.

ORIGINAL LABEL:
"Colden's Liebig's Liquid Extract of Beef and Tonic Invigorator."

AN INVALUABLE AID IN THE TREATMENT OF ALL CASES OF DEBILITY.

Established 15 Years. Endorsed by Scores of Physicians. Essentially Different from all other Beef Tonics. Beware of Imitations.

COLDEN'S LIQUID BEEF TONIC consists of the Extract of Beef (by Baron Liebig's process), spirit rendered non-injurious to the most delicate stomach by extraction of Fusel Oil, soluble Citrate of Iron, Cinchona, Gentian and simple aromatics. An official analysis of this preparation by the eminent chemist ARTHUR HILL HASSALL, M. D., F. R. S., and an endorsement by SIR ERASMUS WILSON, F. R. S., is printed on the label of each bottle.

Its Range of Action Embraces all Cases of Debility.

By the urgent request of several eminent members of the medical profession, I have added to each wineglassful of this preparation two grains of SOLUBLE CITRATE OF IRON, and which is designated on the label as "No. 1," while the same preparation, without Iron, is designated on the label as "No 2."

It acts directly on the sentient gastric nerves, stimulating the follicles to secretion and gives to weakened individuals that first pre-requisite to an improvement, an appetite.

☞ *I will, upon application, send a sample bottle of Colden's Liquid Beef Tonic to any physician in regular standing. Please ask your Dispensing Druggist (if he has not already a supply) to order it. In prescribing this preparation physicians should be particular to mention "COLDEN'S" viz: "EXT. CARNIS. FL. COMP'. (COLDEN). It is put up in pint bottles and can be had of Wholesale and Retail Druggists generally throughout the United States.*

C. N. CRITTENTON, Sole Agent,
115 Fulton Street, N. Y.

Please Mention the AMERICAN ANALYST.

SOME EVERY DAY SUGGESTIONS.

A FEW PARTICULARS RESPECTING THE DEADLY COSMETIC.

Some fifteen years ago, cosmetics were all the rage. Men and women yielded to the temptation of "looking pretty," and were liberal purchasers of toilet articles. At the height of the rage, when one-fourth of the female adults of New York were gay in paint, powder, vinaigre rouge, kohl and enamel, the medical profession and the press opened war upon the practice, which had become a horrible vice, and in a few years cosmetics had practically disappeared from the streets and salons of the metropolis. In this war, Dr. Charles F. Chandler, the present distinguished dean of Columbia College, gained many laurels and much popularity. His analyses of something like one hundred fashionable nostrums then in use showed that all were injurious and that nearly all were dangerous if not deadly in character. Hair restorers and revivers he found to be preparations chiefly of lead and sometimes of silver; skin beautifiers to be largely composed of lead, zinc, bismuth and even mercury; pastes to contain rancid and decaying animal substances; face powders to contain all sorts of abominations, organic and inorganic matter, and washes and lotions to be based upon the most deleterious compounds known to medicine and chemistry.

Evils are more often scotched than killed. The rage for cosmetics seemed to die out, and common sense, appeased, gave the subject no further attention. In the past three years, however, owing partly to the inexplicable "English" craze and partly to the increased admiration, if not idolatry, for the stage that has come over the American heart, the rage has revived and today is more virulent and bodeful than ever before in our history.

While cosmetics, *per se*, are not necessarily objectionable from either a physiologic or chemical standpoint, the vast majority of the articles sold under that name are worse than injurious in nature and effect. A brief review of the stock in trade of the average druggist and dry goods emporium may not therefore come amiss.

Of the preparations for bleaching the hair to "the delicate golden shade so much admired by the court circles of Europe and the best society of the United States," to quote from a label on one of the bottles, all depend for their action upon the decolorizing and corrosive influence of nascent oxygen or nascent chlorine. The bases used in the various nostrums for this purpose are peroxide of hydrogen, aqua regia or bronzer's acid. Peroxide of hydrogen is the mildest and most inocuous of the trio named. It is a colorless liquid which destroys the natural color of the hair, and which if used long enough turns it an unnatural grayish white. It is rather expensive and is therefore used much less than the two other acids. It produces sores upon the scalp and gives rise to skin complaints that resemble tetter, salt-rheum and scald-head. The two acids are equally vile. They attack and eat the hair and the skin alike. The former they partly bleach and partly burn to a handsome gold color; the latter they stain to about the same hue as does a light application of iodine. Besides the dermatologic troubles named, they cause maladies hardly distinguishable from eczema and erythema. One curious disease that they cause is an inflammation of the cells of the hair follicles. The cellular walls break down and lymph and often blood is extravasated in appreciable quantities. All three bases produce falling out of the hair and premature baldness.

The face powders vary to an almost indescribable extent. The best are those made from starch, corn starch and rice. These when lightly dusted upon the face or body are agreeable to the user and probably conducive to health. So far as clogging the pores is concerned, they do no more harm than the dust or dirt with which dame Nature forever showers every object in the world. Even when the starch powders are mixed with precipitated chalk or calcined magnesia no great harm is done from the scientific standpoint. The latter substances cling better to the skin and have a greater absorbent power for the oil and perspiration which perpetually exude from the minute orifices of the body. Below these and objectionable are all face powders made exclusively of chalk and magnesia. They are applied with some manual strength and are forced into the mouths of the pores and sudariporous glands. They distend the latter and produce comedones, pimples and what are known as cat boils.

The irritation thus produced accelerates the flow of blood and increases the pressure on the capillaries. Their final result is a sodden yellow skin, rough, dry, chapped and inelastic. They have, however no, appreciable chemical action upon the bodily tissues.

In the next class are the villainous powders made from lead and zinc, or which contain small amounts of arsenic, mercury and antimony. These constitute the bulk of the apothecaries' stock in trade. They exercise all the evil results described and besides exert a powerful chemical action upon all living tissue. Though the skin is supposed to be waterproof and impenetrable, it possesses a wonderful absorbing power upon any substance in contact with its surface. The house painter absorbs lead from his pigments and suffers from lead colic and lead paralysis. The clown absorbs bismuth and antimony from his "make up," and invariably pays the penalty of sickness and suffering, sometimes of life itself. The chemist drops potassic bi-chromate on his finger tips and suffers for weeks with a "chrome ulcer." The society woman wears scarlet hosiery died with fuchsine and undergoes all the agony of a case of poisoning. So with the luckless devotees of fashion who kalsomime their faces, necks, arms and shoulders with the metallic face powders of the present time. They are bound to have their systems injured, their constitutions permanently undermined, if not to suffer from severe sickness. For all or nearly all of the metallic poisons are cumulative in their action. Most substances are passed through the human system with little or no trouble. Nature has made provision in more ways than one for the "peck of dirt" which every man must eat. If it goes into the stomach, it is inert and expelled. If, supposing it to be mineral water, it passes into the circulation, it is quickly removed by the kidneys. If more powerful, as in the case of alcoholic stimulants, the pores join in the excellent work of dispossessing the intruder. But it is far different with lead, zinc, mercury and arsenic, the four best friends of the cosmetic fiend, whether the latter be manufacturer or user. The system seems unable to rid itself of their presence. Long after death, when tree roots and subterranean moisture have dissolved the body away to mere outlines, the chemist can find in the last particles of the organism the atoms of arsenic, lead or mercury that the owner of the remains had taken into his system during life. In view of these facts, it may be laid down as a scientific injunction: Use no face powders that are not starch or rice powders, and second, use no face powders that contain lead, zinc, bismuth, arsenic or mercury.

Of the numerous "face masks," "beauty masks," "complexion balms," "medicated pastes," blooms of youth, beauty or loveliness, "Lola Montez secrets," not one is good in any respect. The very best is without value. From this they range down to the depths of injuriousness and ghoulish action. The best consist of an oil, fat or glycerine, with some perfume and a trifle of gum benzoin, camphor or other drying substance. These are simply nasty. Their action is the same as of lard or butter smeared thickly over the face of the user. The rest are dangerous as well as disgusting. They contain the same ingredients as the face powders denounced and are even more pernicious in their action. Lead colic, lead paralysis, mercurial ulcers, arsenic sores, boils, carbuncles, abscesses, putrid glands, salivation, sudden baldness and even more serious ills can be traced to their use and will invariably accompany that use as long as the human body remains as it is to-day.

Of the rouge preparations, those made from cochineal and madder are harmless. All others are bad, very bad, and horrible. The "eau de vinaigre," "rouge vinaigre," "camphor wine," "red pepper wash," "capsicum elixir" and the like, which depend for their effect upon irritating the nerve corpuscles are unobjectionable to the physician and the chemist. The new preparations, which are solutions of aniline and other coal tar colors, are poisonous and should be prohibited by law.

There is little or nothing to be said against the washes used to remove pimples and blackheads. They are usually made by dermatologists of good standing, and do their work properly and in a reasonable time. It is far better, however, to depend upon a fine toilet soap or dilute ammonia, gentle but persistent rubbing, the Turkish or Russian bath and a piece of lemon. A two weeks' course of the latter will improve any complexion better than all the washes extant, and, more than that, will correspondingly improve the general health.

So far as the carmine or cochineal paste for the lips, and the kohl, carbon or smoke black unguents for darkening the eyebrows and eyelashes are concerned, if any woman is foolish enough to use these ridiculous and glaringly offensive aids to personal loveliness, she may do it in the knowledge that she runs no risk, at least so far as her health is concerned. They are all composed of mild and inoffensive ingredients, and can hurt nothing unless it be the feelings of those who have some interest in her welfare.

Lastly, there are a few preparations, cosmetic in character, if not in application, which are used internally to beautify the exterior of the body. Of these, arsenic wafers and other forms of arsenic are the chief. It scarcely seems needful to remark that they are vile and wicked in every respect; that the man who makes and sells them is either a knave, a fraud or a fool, and that only a fool, hopeless and unmitigated, will purchase his miserable trash. As, however, the fool killer is not a legal official, it may save the pocket or the health of some one to add that if any preparation contains enough arsenic to influence the condition of the skin, it is a poison which is bound to inflict sickness, suffering and eventual death; and that if it does not contain this quantity, but only a homeopathic amount, it is a pitiable fraud and swindle.

It is hard perhaps to publish these scientific truths, as the manufacture gives remunerative employment to a few men who might, were their industry destroyed, become professional thieves and assassins, instead of being harmless confidence operators as they are.

BURNETT'S
PERFECTLY PURE HIGHLY CONCENTRATED
Standard Flavoring
EXTRACTS

THE superiority of these Extracts consists in their
PERFECT PURITY AND GREAT STRENGTH.

There is no subject which should more engross attention than the purity of the preparations which are used in flavoring the various compounds prepared for the human stomach.

They are not only true to their names, but are prepared from fruits of the best quality, and so highly concentrated that a small quantity only need be used.

JOSEPH BURNETT & CO., Boston, Mass.

AMERICAN ANALYST

—) AND (—

PRACTICAL COOK AND HOUSEKEEPER.

A SEMI-MONTHLY JOURNAL OF PURE FOOD, THE SUPPRESSION OF ADULTERATION,

AND EVERYDAY ADVICE TO THE PHYSICIAN, DRUGGIST AND DENTIST.

Office, 19 Park Place. [Entered at the Post Office, at New York, as Second Class Matter.]

VOL. IV.—No. 5. NEW YORK, MARCH 1, 1888. Whole No. 77

All Postmasters will receive subscriptions for the **AMERICAN ANALYST.**



DETECTION OF ADULTERATION IN BEER.

BY C. A. CRAMPTON, ASSISTANT CHEMIST UNITED STATES DEPARTMENT OF AGRICULTURAL.

(From U. S. Dept. of Agriculture, Bulletin No. 13, Part 3.)

Probably there is no one article of daily consumption that has been so often subject to suspicion of adulteration or sophistication as beer. Its complex composition and peculiar nature have deceived people into making all sorts of charges against its purity, but experience has failed to establish the truth of by far the greater majority of these charges, and the facts of many published analyses show that it is as free from adulteration as most of other articles of consumption, and more so than some. Here comes the question, so difficult to answer in this country, of what constitutes adulteration or sophistication of an article of food? The definition of what shall constitute a pure malt liquor is hard to settle. Even in Europe, where a much stricter supervision is kept over food-stuffs than here, the definition varies widely. In Bavaria, where more beer per capita is consumed than in any other country, the laws limit the materials from which it is made to barley, malt, hops, yeast, and water, while in England the comprehensive definition has been given to beer as being "a fermented saccharine infusion to which a wholesome bitter has been added." (Blyth.)

SUBSTITUTES FOR MALT.

A great deal has been said, pro and con, on the subject of the propriety of the use of other matter than malted barley as a source of saccharine material for brewing purposes. There may be said to be three ways of substituting saccharine material. First, other grain may be used for malting; second, unmalted starchy matter, that is whole grain, may be added to the malt before it is mashed, the latter being diluted, as it were, for the diastase in the malt has converting power sufficient for considerably more starch than is contained in itself; third, the saccharine matter may be supplied already converted, as in commercial starch-sugar, or glucose, cane sugar, inverted cane sugar, etc. Of these different substitutes the third class is probably the more objectionable, as beer brewed from such saccharine matter, is lacking in various constituents derived from the grain, which are important additions to its nutritive power, namely, the phosphatic salts and the nitrogenous bodies. In much the same way would bread made from starch alone be lacking in nutritive value. There is no way of determining directly or absolutely that a beer has been brewed partially from glucose, but it may be inferred from its small content of those constituents which are contained in malt, but not in glucose, such as phosphoric acid and albuminoids, and the existence in the ash of large proportions of such salts as are known to form a large part of the ash of commercial starch-sugar, as sulphates. König gives .05 per cent. of phosphoric acid as the lowest limit for a beer containing 5 per cent. of extract or over. The association of Bavarian chemists depends on the estimation of the nitrogen for the detection of the use of malt substitutes, and establishes the minimum of .65 per cent, of nitrogen (4 per cent. of albuminoids) in the extract. It is very evident that these figures are too high for American beers; only two of the samples examined, Nos. 4,821 and 4,823, contain less than .05 per cent. of phosphoric acid, and these are both imported beers; while the average content of the samples of American beer is .077. Not a single one of the samples contains as low as .65 per cent. of nitrogen in the extract, most of them containing about 1 per cent., while some give over 2 per cent. Dr. Englehardt's samples show a still higher average per cent. of phosphoric acid. Unfortunately there was no determination of the albuminoids in his samples. Yet it is a well-known fact that very few beers are made in this country without more or less malt substitution. Nothing can settle this point and enable the analyst to decide positively whether malt substitutes have been used until a standard is established by the analysis of a large number of samples known to be brewed from pure malt alone.

SUBSTITUTES FOR HOPS.

The nature of the bitters used in beer has long been the target toward which public suspicion is directed, and nearly every substance known possessing a bitter taste has been enumerated among the adulterations of beer, from poisonous alkaloids, such as strychnin and picrotoxin, to harmless or quasi-harmless bitter roots and woods, such as quassia, gentian, etc. Complete and exhaustive schemes of analysis have been compiled, such as Dragendorff's, Ender's, etc., for the detection and isolation of such foreign bitters. Either these methods of investigation are faulty or difficult of manipulation, or the use of foreign bitters is very much less prevalent than is generally supposed, for the cases where such bitters have been detected and isolated are very scarce in chemical literature. In fact, Elsner, a German authority on food adulterations, goes so far as to say that there has never been a case where the existence of a foreign bitter in a malt liquor has been proven with certainty. This is going too far, of course, for picrotoxin and picric acid have undoubtedly been found in beers, and probably more cases of such adulteration would occasionally have been discovered were it not for the difficulty of the analysis and the small quantity of matter required for imparting a bitter taste. But there is probably much less of this hop substitution than the space given it in works on the subject would indicate. Hops not only give the bitterness to beer, but also impart to its peculiar aroma, and enhance its keeping qualities, and unless it were at a time when they were very dear it would hardly pay the brewer to sacrifice the good flavor and keeping qualities of his beer in order to save a few cents a pound in his bitters.

It is stated by authorities on the subject that the bitter matter of hops is precipitated by acetate of lead, while with *all* hop substitutes the filtrate from the lead precipitate retains its bitter taste. The excess of lead should be precipitated by sulphureted hydrogen before the filtrate is tasted for bitterness. I examined qualitatively by this test all the samples analyzed, and found them all free from foreign bitters according to it, with one exception, No. 4,811, which contained a bitter other than hops, though not in sufficient quantity to admit of its separation and identification. All the samples except Nos. 4,801, 4,811, and 4,815 gave a plainly perceptible odor of hops in the distillate.

AESTHETIC STATESWOMEN. — First Kansas woman: "Were you at the polls yesterday, Minnie?"

Second Kansas woman: "Oh, yes, I was out at the dear little polls. Isn't it just too nice to vote?"

"How did you vote?"

"Really, dear, I don't remember."

"Well, you remember that they had two kinds of tickets, white and red."

"Oh, I remember now. It was the lovely little red ticket that I put on the polls."

"Why, I am surprised. That was the Republican ticket."

"Well, I didn't ask. I saw that the color of the ticket was a delicate red, and that it exactly matched my dress."

THE COAL BEDS OF GREAT BRITAIN.—It appears that about seventeen millions of tons of coal per year is the amount yielded by the chief coal districts of Great Britain—Newcastle, South Wales and the Clyde country—and, assuming this to represent the average annual consumption for many years to come, it is estimated that British mines will not be exhausted in less than 600 to 800 years. It is further calculated that, drawing upon only one of her fields, the Westphalian, Germany will not be able to exhaust her coal supply in less than a thousand years, and she has, in addition, the riches of the Bavarian, the Aachen, and the Silesian coal districts. It is claimed, therefore, that, independent of the resources of other countries, Great Britain and Germany could supply Europe with coal for an unlimited period.

American Analyst,

Published on the 1st and 15th of each month.

Subscription, - - - - - - $1 per year.
Single Copies, - - - - - - - 5 cents.
Subscriptions to foreign countries, - $1.50.

Remit by Express Money Order, Draft, P. O. Order, or Registered Letter.

Advertising rates on application.

THE ANALYST PUBLISHING CO.,
Publishers.

H. LASSING, M. D., } *Editors.*
T. P. McELRATH, }

No. 19 Park Place, ... New York.

NEW YORK, MARCH 1, 1888.

ANSWERS TO CORRESPONDENTS.

J. McF.—*What will keep common flour paste from drying quickly?* Try the addition of a little glycerine.

Homer.—*What are cherry malt phosphites?* We do not know, but being manufactured by a reputable firm, you can rely on their statements as to what they make them of.

H. H.—*What is the so-called Frankfort wine vinegar which it is claimed is three times as strong as whiskey vinegar?* See article on "vinegar" on another page.

P. D. Brooklyn.—1. *What is terra alba?* Gypsum, plaster of paris, sulphate of lime $CaSO_4$. 2. *What is oleo oil?* The fatacid of tallow separated from the stearine. 3 *What are the adulterants of sugar?* Generally glucose or grapesugar. Other adulterants are seldom found now.

PROGRESS OF THE ADULTERATION BILL.

On February 15th the Finance Committee to which the proposed anti-adulteration bill has been referred, gave a hearing to Messrs. F. B. Thurber and H. A. La Fetra of New York, E. H. Bartley of the Board of Health of Brooklyn, Finley Acker and L. W. Buckley of Philadelphia, and P. F. Smith of Pittsburg, comprising the legislative committee of the National Pure Food Convention. Mr. Thurber said the bill was an improvement on former bills of this character, and was believed to be more feasible and practicable than other bills had been. It applied only to places within the jurisdiction of the United States, and what was known as the transportation clause, by which railroads were required to inform themselves of the character of articles transported by them, was eliminated. While he thought that the evil of adulteration had been exaggerated, at the same time it existed to a sufficient extent to make it desirable that there should be a national anti-adulteration bill on the statute books. Such a bill would form a basis for State action. Similar bills had been passed in Massachusetts, New York, and Illinois. Mr. La Fetra said that staple articles of food, such as flour, were not adulterated to any great extent, but that the same could not be said of many proprietary articles, such as infants' foods, baking powders, etc. An examination of 711 samples of food by Dr Smart of the United States Army, he said, showed that food adulteration prevailed in this country at present to as great an extent as in England at the time of the adoption of anti-adulteration measures. The profits on adulterated articles were so large that their manufacturers could expend much more money in pushing their wares than manufacturers of pure food. Senator Morrill asked whether it would not be found necessary, in order to secure punishment for adulterators, that a standard of each article of food should be defined. The gentlemen present replied that they thought this unnecessary. If any person claimed that his preparation was not deleterious to health, or not adulterated, it could very easily be determined by the courts. Besides, the publication of the components of all articles of food by the Government would result in great good of itself. Furthermore, the sale of any article for something which it was not constituted an adulteration. Mr. Thurber said the New York anti-adulteration laws had been of great benefit, though insufficient appropriations had been made for all purposes except to prevent the sale of impure milk.

A PRIZE COMPETITION.

A prize is to be awarded in 1890 in Zurich, Switzerland, for the following researches in natural history: "New investigations are desired regarding the relation which the formation of the bones bears to the statics and mechanics of the vertebrate skeleton. The results of the investigations as a whole are to be demonstrated in detail by way of example on the skeleton of a definite species." The conditions are as follows: Competitors for the prize must send in their work in German, French, or English, by September 30, 1890. The award will be made by a committee consisting of the following gentlemen: Professor Hermann von Meyer, Zurich; Professor L. Rütimeyer, Basle; Professer H. Strasser, Berne; Professor Otto Mohr, Dresden, and Professor Albert Heim, of Zurich, representing the committee offering the prize. The judges are authorized to award a first prize of 2,000 francs; and a further sum of 1,000 francs is placed at their disposal for distribution in minor prizes according to their discretion. The work awarded the first prize becomes the property of the Foundation of Schnyder of Wartensee, which will arrange with the author regarding the publication of the same. Each competing work must bear on the title page a distinguishing motto, and must be accompanied by a sealed envelope containing the name of the author, and bearing on the outside the same motto. Competing works are to be sent in by the date named, to the following address: An das Präsidium des Conventes der Stadtbibliothek in Zürich (betreffend Preisaufgabe der Stiftung von Schnyder von Wartensee für 1890."

CONCERNING CONFECTIONERS.

We recently published an article on the subject of candy makers' frauds, which, as was perhaps natural under the circumstances, drew down upon our heads a rebuke from the *Weekly Confectioner and Baker*. The American Analyst has frequent occasion to expose and denounce trade trickery, and we have become familiar with the coincidence that every such exposure is followed by an indignant rebuke from some subservient trade journal. In the instance referred to we denounced a kind of imposition which is as contemptible as it is widely practiced. We said that it was a fraud upon the public for great manufacturers in great cities to sell only the highest grade of confectionery in their own homes, to gain a superb reputation for their work in those homes, to carefully conceal in their homes the fact that they made low grade, cheap and nasty stuff and to sell this stuff all over the land upon the strength of that reputation to people whose knowledge came from the goods sold in the cities. To put it in a different form. Here is a vast store on Broadway in which are sold quinine pills. A sick man wants the best. The dealer tells him, "You can buy cheap ones which I will not guarantee for a cent a piece. The best are Joblots' which I guarantee as perfect, costing two cents." The man naturally buys Joblots'. The business continues for years, always on this basis. One day the man goes to the country and at the village store wants quinine pills. There, to his delight, he finds Joblots' preparation as well as the inferior kind. Which will he purchase? He buys Joblots', and long after when the pills have not done their work, he learns that Joblots sells a first class article in his own store and wholesales a vile one to dealers all over the land over his own name. As a matter of law Joblots would be liable under such circumstances to a suit for damages. As a matter of morals, it is a swindle, mean and dishonorable. While the case is stronger the principle is the same. We merely called attention to it as a petty and miserable fraud. It does seem pitiful that manufacturers who make and sell in New York City only the finest, purest, and most artistic confectionery in the world should make and sell over their names a class of goods which are as vile and worthless as those made by the concerns not long ago suppressed by the Board of Health. He who delights in the exquisite chocolates he finds in the stores of the metropolis and who identifies them with the name of their maker is often deceived and defrauded when he buys goods from that maker's boxes in other places, which are a despicable mixture of chocolate, starch, glucose, venetian red and cheap flavoring. This is merely an opinion. It should be taken for what it is worth. If the *Confectioner and Baker* believes that a first class manufacturer can rightfully indulge in the practice we denounce, it is entitled to that opinion. It is not likewise entitled to, but it receives the assurances of our surprise and compassion.

TRADE LIES.

When salesmen, in their ungovernable desire to secure orders, make false statements to their dealers, employers, if they are wise, will take vigorous measures to prevent a repetition of the misbehavior; but when the employer himself, especially if the firm be one claiming high respectability, descends to similar untruthful methods in print, on circulars bearing the address of the house, who shall be held accountable? We were recently shown a circular issued by Messrs. Mau, Sadler & Co., of San Francisco, one of the largest grocery houses on the Pacific coast, announcing that they are the agents for the sale of MacUrquarht's, "the only genuine imported Worcestershire Sauce." The objection we make to this statement is that a large wholesale grocery house, such as the one named, must have known that the sauce thus advertised is not, as they expressly declare, the "only genuine imported" Worcestershire Sauce, if indeed it is imported at all, and that Lea & Perrin's Worcestershire Sauce, for which John Duncan's Sons, of New York are the American agents, is genuine and imported. While there is no doubt in anybody's mind of the importation and genuineness of the latter, and it is known by every buyer of sauces, no such assertion can be made of the MacUrquarht's sauce. The fact that the latter is put up and labeled so as to bear a close resemblance to the well known Lea & Perrin's sauce, is a tacit acknowledgement that at least its manufacturers, be they in New York or in Worcestershire, well know the fact that Lea & Perrin's is a genuine sauce and is imported. Any attempt to belittle another maker's goods by innuendo or misrepresentation, always reacts on the person making it; but the loose business methods which sanction and connive at such unworthy schemes deserve the severest condemnation.

SENSE RECIPROCITY.

A Vienna physician named Urbanschitsch reports some curious experiments, the value of which must be left to future research to decide. His general conclusion is, that the excitation of one sense-organ increases the acuteness of the others. If a disk be regarded at such a distance that is color its indistinct, the hearing of a sound will bring out the color. The beating of a watch is heard more clearly with the eyes open than with the eyes closed. Red and green increase auditory perceptions; blue and yellow weaken them. The fact

that we listen to music with our eyes closed is due to other reasons, and also to the fact that the *ensemble* appears best when the tones are not at their clearest. Smell, taste, and touch are open to the same influence. Red and green increase the sensitiveness of each of these senses; yellow and blue weaken their sensitiveness. Touch and temperature have a reciprocal influence. If one tickles the skin and plunges it into warm water, the tickling ceases; if into cold water, the tickling brings out the feeling of cold. These observations are regarded as showing the same re-enforcing action between sensations as has been shown to exist between motions, and as offering a mode of explanation of those curious associations between colors and sounds so insistent in some minds.

BEER ANALYSES.

In connection with the tables of analyses of beers we published in our last number, it is but fair to state that the analyses made by the AMERICAN ANALYST are there fully corroborated by the chemist of the U. S. Agricultural Bureau, and as will be seen from the article we publish in the present number, that official also takes the same views about adulteration and the use of preservatives we have all along maintained.

VOLAPÜK.

A PRACTICAL COURSE OF SELF-INSTRUCTION IN THE UNIVERSAL LANGUAGE.

LESSON V.

85. Adverbs of order (Nums ladvelibik).

All abverbs of order end in *ido*.

Ex.—telido, in the second place.
folido " fourth "
velido " seventh "
balsido " tenth "
kilhimido, in the three hundredth place.

86. Adverbs of number (Nums denuama).

(1.) The adverbs of number end in *na* (equivalent to the English "times").

Ex.—kilna, three times; lulna, five times.
jölna, eight times; telsna, twenty times.

N. B.—In such words as telsna, kilsna, Volapük introduces an *e*, and writes telsena, kilsena, etc., so as to separate the consonants.

(2.) In Volapük, adverbs of number are made adjectives by affixing *lik* to them.

Ex.—balnalik, folnalik, zülnalik, kilsnalik (kilsenalik), tumnalik, etc.

87. Distributive adjectives (Nums dilama).

(1.) Distributive adjectives are formed by placing the letter *a* (each) separately before the numeral.

Ex.—a tel, each two; a tels, each twenty; a tum, each hundred; a folid, each fourth (or folid alik).

(2.) Each second, each third, etc., or always the second, third, etc., are called in Volapük; a telid, a kilid.

Ex.—Each tenth soldier got killed.
solat a balsid päfunom.

88. Manifold numerals (Nums mödükama).

Also the adjectives formed of numerals by the affix *fold*, end in *ik* in Volapük.

Ex.—Velik, sevenfold; folsik, fortyfold; tumik, hundredfold; milik, thousandfold.

The affix *nik* forms adjectives like telnik, two kinds; malnik, six kinds.

89. Numerals used as nouns (Nums subsatik).

(1.) When numerals are used as nouns they always take the affix *el* in Volapük.

Ex.—Kilel, three (quantity of three); balsel, ten (quantity of ten).

(2.) The numerals indicating a fraction end in *dil*.

Ex.—Foldil, a quarter, a fourth part, ¼.
Telsedil, twentieth part, $\frac{1}{20}$.

90. Numerals used as verbs (Velibs numik).

(1.) The verbs formed of numerals, like all other verbs in Volapük, end in the affixed syllable *ön*.

Ex.—Balön, to unite (bring to one).
Telön, to double (to multiply by two).
Kilön, to triple (to multiply by three).
Tumön, to multiply by hundred.
Milön, to multiply by thousand, etc.

(2.) The English verb, "to simplfy," is called in Volapük *balükon*, not *balikön*, for then *balikos* would have a double meaning, *i. e.*, "the simplicity," and also, "it simplifies."

91. Different expressions derived from numerals (Difiks numa *sepets*).

Trinity, kilbalod; triangle, kilagul; three-twin child, kiläb; unanimity, balif; unanimous, balifik; single, baladik; some, ans; singularity, balad (balöf); solitary, soalik; first time, balidna; quart (music), foluf; two by two, in couples, a telik (a tel, telelik); quadrant, vadat (folaflan); quantity, limödöf; quota, limödikos; small twelfth part, balseteldilil; discord, telif; two-headed, telakapik; five hundred, lultum; five times hundred thousand, lultum mil; seven kinds, velnik; seventy hundred, velstum (velmil); in the seventeenth place, velsido.

92. Enumeration of time (Lenuns tima).

In Volapük time is stated by using the words glok (clock) or düp (hour).

Ex.—Seven o'clock.
Vel su (len), glok; or, düp velid (vel).
Half-past seven, düp velid e lafik.
A quarter to eight (7¾ hours), düp vel e foldis kil.

In Volapük one follows this order in stating time:

Hour, half hour, or quarter, then minutes and seconds.

A quarter to eight may be said also this way: Düp velid e minuts folselul.

The same arrangement does for the year.

Ex.—1886 = 1 thousand 8 hundred 80 and 5.
Balmil jöltum jölselul.

93. Date (dät).

Also in stating dates the order of 92 is followed, thus:

(1) The year (yel), (2) the month (mul), (3) the day (del), (4) the hour (düp); therefore—

Glasgow, the 2d December, 1884, 9 o'clock in the evening (9 P. M.).

Glasgó, balmil jöltum jölsefel.
Glasgow, 1 thousand 8 hundred 80 and 4.
Dekul tel(id) düp zül vendela.
December second, hour nine of the evening.

PRONOUNS (Pönops).

94. Personal pronouns (Pönops pösodik).

(1.) Singular (banum): ob, I; ol, thou; om, he; of, she; os, it; on, one; ok, oneself; ons, you (polite for thou).

(2.) Plural (plunum):
obs, we; ols, you.
oms, they (masculine).
ofs, they (feminine).
oks, themselves.

(3.) Affixes, for cases (finams deklinafalas): oba, of me; ole, to you; omi, him; obas (obsa), of us; oles, to you; omis (omsi), they (4th case masculine);
ofa, of her; ose, to it; oni (4th case of on), the one or the other;
oki (4th case singular), okis (oksi), (4th case plural), } one's self.

The polite pronoun "you," instead of "thou:"
2d case—onsa, of you.
3d " onse, to you (singular).
" " onses, to you (plural).
4th " onsi, you.
" " ofs, they (feminine plural).

95. The personal pronoun one (English you) stands for singular as well as for plural, therefore it has two declinations.

(1.) ons, you (singular); ons, onsa, onse, onsi.

(2.) ons, you (plural); onss (onns), onsas, onses, onsis.

96. Possessive pronouns (Pönops labedik).

(1.) Singular:
obik (or oba), mine, my.
olik (or ola), thine, your.
omik (or oma), his.
ofik (or ofa), her.
osik (or osa), its.
onik (or ona), somebody's.
okik (or oka), his or her.
onsik (or onsa), your.
Feminine, ji-obik (of-obik), mine.
Neutral, obikos (os-obik), mine.

(2.) Plural:
obiks, my; oliks, your; obsik, our; olsik, your; omsik, their (masculine); ofsik, their (feminine); oksik, their.

(3.) Affixes for cases (finams deklinafalas):
2d case—obika, of mine (plural, obikas).
3d " olike, to your (plural, olikes).
4th " omiki, his.
3d " osike, to his, to hers.
2d " obsika, of our (singular).
3d " obsikes, to our (plural).
3d " olsike, to your (singular).
2d " onsika, yours (polite).

97. Demonstrative pronouns (Pönops jonik):
that, ut; just that, *üt.*
that, the same, *öt;* just the same, *öt.*
this (masculine), *at;* just this, *ät.*
this (feminine), *ji-at* (of-at).
this (neutral), *otas* (os-at).
yon, *et;* just yon, *eit.*
self, *it;* himself, *iet;* herself, *ji-iet, of-iet.*
such, *som;* just such, *söm.*
other, *votik.*
the former...the latter; *balimik...votimik.*
each other, *balim votimi, balvotik.*

Ex.—man at, this man; mana et, of that man.
doge ot, to the same day.
flens it, the friends (them)selves.
kanes eit, just yon arts.

98. Rule. All possessive and demonstrative pronouns in Volapük are indeclinable when placed after the noun collectively.

They are declined when placed *before it* or after it *singly*.

99. When a pronoun is used for different nouns it is not repeated in Volapük.

Ex.—this man, this woman, and this child:
ats man, vom e cil,
or, man, ji-man e cil ats.

(*To be continued.*)

SOURCE OF ANTIMONY.—An article in *Engineering*, describing where antimony is found in Europe, states that large quantities come from ancient mines worked by the Romans for gold. It is probable that these mines will in future become the chief source of this metal, so far as its consumption in Great Britain is concerned. Antimony ore, however, is very widely distributed. Antimony is generally found associated with other ores, more especially with lead, iron, zinc and silver. It is a constant source of trouble to the smelter on account of the difficulty with which it is eliminated. Antimony is chiefly used as an alloy with other metals. Mixed with lead it forms type metal; mixed with tin it si employed for music type. Antimony is also alloyed with copper for bearings, and is found in pewter, queen's metal, Brittania metal and in shot. A great deal of antimony is used as coloring matter, especially in paints. In medicine antimony plays an important part, although the quantity employed in this way is very small.

UNREASONABLE.—Traveler to hotel-keeper: "Now look here. I want a good fire in my room; neat attendance; prompt and regular well-cooked dinners; good wines at a low price, and no mistakes in the bills. If I get these, I could stay——"

Hotel-keeper: "Hold on! I think you've made a mistake. This isn't paradise."

GINSENG.

HOW THE UNITED STATES CONTRIBUTE TO THE DRUG SUPPLIES OF CHINA.

Ginseng is the most potent in its virtues and varied in its applications of all known Chinese medicines. American and European pharmacists have never been able to attribute any remarkable properties to the root, although it has been known to them for over one hundred years. Analysis shows that it is rich in gum and starch, and that it contains albumen, resin and, perhaps, other principles, and it is put down on our dispensatories as being a mild stomachic. On the contrary, the Chinese impute to it the most miraculous virtues. It has even been known, they say, to raise the dead to life. In some form or other it enters into a multitude of their medical compounds, but it seems somewhat difficult to learn exactly what they use it for. Probably it is a panacea. At any rate, it is given an almost fabulous value in the Celestial Empire, and the entire production of the United States, amounting to $1,000,000 annually, is exported to China. The people who have been engaged for years in this export trade with China confirm the statement about the mystery connected with the use of ginseng among the Mongolians. An exporter once showed a piece of the root to a member of the Chinese Embassy, and inquired about its use among his people. The ambassador evaded the question with the adroitness of a born diplomat. It is certain, however, that the Chinese regard it as a restorer of youth to the aged. The *habitat* of the ginseng plant is widely distributed. It grows wild in Manchuria, Corea, along the great wall of China, and in various regions of the United States. The most valuable ginseng was formerly gathered in Manchuria, where its sale became the exclusive monopoly of the Emperor. In recent years the supply there has been about exhausted, and it has been obtained elsewhere. Besides, it is now cultivated along the banks of the Usuri, where the humidity of the Pacific seaboard favors the development of a splendid vegetation, and also in Japan and Corea. The annual production in the United States is about four hundred thousand pounds, which is obtained from a great number of States. Much comes from the mountains of West Virginia and Pennsylvania, a little from North Carolina, Ohio, Indiana and the States of the Northwest furnish the rest. As early as 1751 ginseng was gathered in New England as an article of commerce. The celebrated Rev. Jonathan Edwards wrote a letter to his friend, Rev. Mr. McCulloch, in Scotland, in 1752, that since it had been found the previous summer in the woods near Stockbridge and elsewhere in New England and in the country of the Six Nations, "the traders in Albany have been eager to purchase all they could get of the root to send to England, where they make great profit by it. This has occasioned our Indians of all sorts, young and old, to spend abundance of time in the woods, and sometimes to a great distance, in the neglect of public worship and their husbandry, and also in going much to Albany to sell their roots (which proves worse to them than going into the woods), where they are always much in the way of temptation and drunkenness." A botanical description of the plant is as follows: *Panax quinquefolium* has a perennial root which sends up annually a smooth round stem, about a foot high and divided at the summit into three leaf stalks, each of which supports a compound leaf, consisting of five or more, rarely of three or seven petiolate oblong-obovate, cuminate, serrate leaflets. The flowers are small, greenish, and disposed in a simple umbel, supported by a deduncle which rises from the top of the stem in the centre of the petioles. The fruit is a kidney-shaped, scarlet berry crowned with styles and calyx with two and sometimes three seeds. The plant is indigenous, growing in the hilly regions of the Northern, Middle and Western States, and preferring the shelter of thick, shady wood. The root is fleshy, somewhat spindle-shaped, from one to three inches long, about as thick as the little finger, and terminated by several slender fibres. Chinese name ginseng from the resemblance to the human figure. When dried the root is yellowish white and wrinkled externally, and within consists usually of a hard central portion surrounded by a soft whitish bark. It has a feeble odor, and a sweet aromatic taste somewhat analogous to that of licorice root. Now something about how it grows and its preparation for market. It is never found in cleared land unless protected by shade of some sort, and it only thrives in rich soil. Among mountain ranges it grows most luxuriantly on the shady side of the hill. It is also found in comparatively level countries where the lands are well timbered and the soil is fertile. After the plant appears in the spring, if by any means the top be bestroyed a new top does not grow again during the season. The best time to gather the root is when the seed is ripening or after it is ripe, from Sept. 1 until the severe frosts kill the tops of the plant. At that time the root is gaining substance, and is much more firm and solid than in the spring. On this account, while it requires only from three to four pounds of the green fall-dug root to make one pound of the dry, it requires from four and one-half to five pounds of the spring dug. Ginseng is dug almost exclusively by the poorer classes of people, who roam over the mountains until they find what they deem a good location for a camp. There they build a rude hut, and the whole family, including the mother with babe in her arms, engage in the search and digging. Each one, roughly dressed, goes about with a sharp stick in his hand and a sack over his back, his eyes turned intently on the ground. Once a week one of the "seng" hunters takes the ginseng collected to the nearest market, and in return brings back food and other articles that their simple wants demand. And with such an existence these people seem perfectly happy and contented. In preparing crude ginseng it is only necessary to wash the root thoroughly and to dry it, either in the shade or sun. It is never dried by a fire because of the danger of burning. Once scorched it has no value whatever. The clarified ginseng is generally prepared in a building specially erected for the purpose. The "green" roots are shipped to these works, where they are washed by machinery. This is followed by a process of steaming, and then the roots are placed in driers. These driers are wooden frames covered with canvas or wire netting all of one size, so that they can be packed closely together. The ginseng is spread on these driers and they are placed in the dry-room, which is heated to a temperature of 170°. The crude ginseng is white, the clarified straw color, translucent, and often almost transparent. As has been already written, ginseng is altogether an article of export. There is a small amount consumed in this country, it is true, and nearly every drug store has it it stock, but the demand from abroad regulates the high price. Green ginseng brings from 40 cents per pound spring dug to 60 cents per pound fall dug. It is gathered up by buyers, who sell it to the large exporters. The biggest ginseng houses are in Cincinnati and Baltimore. The wholesale drug houses of Chicago handle some ginseng that they receive from the country drug stores of the Northwest with which they trade. The wholesale price of the dry root is from $1.75 to $2.25 per pound, according to the quality. The annual production of the United States is about four hundred thousands pounds and amounts to $1,000,000. In China the profits must be enormous. Besides the high prices paid for it ordinarily, a root in which a fanciful imagination can trace a man's shape will sell for $300 or $500, easily for its weight in gold.

In the Celestial Empire ginseng has been in use for hundreds—perhaps thousands—of years. Its value, wholly fictitious, is clearly firmly, established. The demand is firm, steady and increasing. The supply of the wild plant cannot hold out long. The spring digging of ginseng practiced for years is rapidly depleting ginseng in the United States. Ultimately—and soon—it will be exhausted. Its cultivation will doubtless be speedily undertaken. The cultivated root, it is said, is not as valuable as that which grows wild. Nevertheless, men who have handled it are agreed that it is worth trying to raise here as it is abroad.

VINEGAR GOOD AND BAD.

WITH A SPECIAL REFERENCE TO SOME PARTICULARLY BAD.

There are good vinegars in the market; there are also those which are indifferent, bad and very bad. The latter are the more common. The best and most wholesome are those made from cider and wine. These retain suggestions of the apples and grapes from which they originally came. If carefully kept they remain palatable for an indefinite period: if carelessly, they, like every good food-substance, are apt to become mouldy and unwholesome. From a gastronomic standpoint, the best vinegar is that which is made from red wine; next to it are those made from white wine, cider, and perry. The first is invaluable in salad dressing on account of its beautiful color; the second is most useful in those preparations where no color at all is desired; the third is available for all general use, and the last comes to the front whenever the delicious jargonelle flavor is conducive to the culinary success. Below this first class are the vinegars made from ale, beer, and whiskey. These are coarse, heavy, and often offensive. They never, except in the case of whiskey, are made purposely, but represent the desire of some brewer or distiller to utilize goods which have been ruined by careless treatment and which would otherwise prove a total loss. The ale that sours in the barrels and hogsheads; the beer that begins to putrify in the vaults; and the wretched whiskey which is so full of fusil oils that no dealer, not even the lowest, will purchase it at any price, are the raw materials from which this class of vinegars is made. They cannot be said to be injurious, but they are simply miserable apologies for the real article. In England they make what is called a malt vinegar from mashed malt without distillation, but by simply allowing the sugar fermentation to go to an acetic fermentation. It may also be stated that there is nothing equal for domestic use to a good cider vinegar, and consumers should be willing to pay a fair price for honest goods. By buying their vinegar from reputable dealers only, there will be no difficulty in avoiding such unwholesome stuff as we herein expose. Below this grade of whiskey vinegar, bad enough in every respect, are the vinegars made in the laboratory by chemical processes, and especially by the destructive distillation of wood. Unless skillfully refined and purified they contain creosote, wood tar, and other products of the same class, all of which are injurious; many of which are poisonous, and some of which are fatal to the user. They have one advantage, and only one, they are cheap. They bear the same relation to genuine vinegar that myrbane oil does to bitter almonds, glucose to pure sugar, sweetened dilute oil of vitriol to lemonade, and lard oleomargarine to fresh creamery butter. Such vinegars should receive the careful attention of Dr. Rigney, the State Inspector of vinegar. These remarks are called forth by a sample specimen of what is labelled "Frankfort Wine Vinegar," and which is recommended for use after dilution with not less than half water. A rough analysis shows it to be refined and purified pyroligneous acid, slightly flavored and possibly tinted. For those who wish to eat out the lining of their stomach and to produce gastritis and enteritis of the most dangerous type it is a good thing, and is to be recommended. It is also to be recommended to the attention of Dr. Rigney, as before suggested.

NEW CURE FOR BURNS.—A French remedy for burns is to allow the contents of a syphon of seltzer water to flow slowly over the affected parts. It quiets the pain speedily and expedites the final cure.

INSURANCE.

SOME POINTS FOR FAMILY CONSIDERATION.

Though it would not seem to the careless observer that the subject of insurance could naturally come within the proper field of discussion of the AMERICAN ANALYST, a moment's reflection that this journal is written for the families of the land who look to us for information on every subject in which they may be interested, will at once clearly point out that a discussion of life, fire and accident insurance is not only appropriate in our columns, but the numerous inquiries we have received on the subject seem to necessitate a very full and instructive series of articles. We will therefore start with a quotation of the clearest definition of the term "insurance" we have seen. "Insurance is the system of machinery by which it is sought to guard against the pecuniary consequences of certain accidents to which men are liable, such as the loss of property by fire or the loss of future earnings through disablement or premature death. Insurance does not attempt to prevent these accidents, nor even to protect men against all the consequences of them. It deals only with the main pecuniary loss which such accidents are fitted to occasion, provides for it beforehand, practically distributes it among the persons who are more or less exposed to the same risk; and so, when the accident does light on any one of them, its pecuniary effects are neutralized or greatly mitigated."

There are many branches of insurance, but the three chief developments of this system which will interest our readers are life, fire and accident insurance. The conditions which are necessary to success (in addition to good administration) are chiefly these: There must be a risk of real loss which it ought to be beyond the power of the insurer or the insured either to avert or to hasten; a large number of persons must be liable to the like risk; the accident contemplated (be it fire, death or injury), must be likely to fall on a comparatively small number of the persons exposed to the risk of it; the probabilities of its occurrence must be capable of being estimated beforehand with some approximation to certainty; the loss apprehended must be so considerable when it does occur as to be worth providing against; and the cost of that provision must be comparatively so small as not to be prohibitive. Beside the three branches of insurance which we shall specially consider we may mention as legitimate subjects of insurance such provisions as fidelity guarantees, which give bonds for employees and others in positions of trust, hail insurance, insurance for horse and cattle owners, insurance for business men against bad debts, for real estate owners against defective titles, against breakage of plate glass, against loss occasioned by boiler explosions. During our late war there were companies who insured against members being drafted by providing substitutes.

We will take up life insurance first. This system embraces a variety of contracts by which the insurers engage to pay capital sums in consideration of other sums received by them, in a vast variety of contingencies, the system being skillfully adapted to nearly every contingency of a pecuniary nature connected with human life. The contracts of life insurance may be divided into two classes (1), those in which the sum insured is certain to become payable, provided only the insurance is kept in force and (2), those which are of a temporary or contingent character, so that the sum insured may or may not become payable according to circumstances. The great bulk of life insurance transactions belong to the first of these classes. The simplest contracts are those generally known as whole term insurance on a single life which simply provide for the payment of a certain sum on the death of the person named in the policy. The premium or consideration for these contracts may be either an annual, semi-annual or quarterly sum payable during the continuance of the contract or may be arranged in various other ways. Then we may mention endowment contracts, which are identical with the preceding, having the additional feature of the principal being payable upon the person insured attaining a given age. There are also insurances on joint lives, the sum insured payable to the survivor. To the second class belong short period insurances, effected for limited periods to cover certain contingencies, survivorship insurances, deferred insurances, but for the present we shall confine ourselves to plain life insurance of the first class. It may be remarked here that while life insurance has much in common with fire insurance there are some essential differences. Life insurance does not take into account the intrinsic value of the subject of insurance as fire insurance does, and the loss when it occurs is always total, not part as it may be in fire insurance; and again in plain life insurance the event causing the loss is sure to occur, whereas in fire insurance it may never take place. The terms insurance and assurance have been used indiscriminately. The consideration for life insurance policies is called a premium which is calculated by means of mortality tables, which exhibit the number of persons who out of a given number born or living at a particular age live to attain successive higher ages, and the number of those who die in the interval. Among these those principally in use are the Northampton, Carlisle, Experience, Combined actuaries, English, and the Scotch offices. The amount of money with its accruing interest, payable yearly during the expectation of life of the subject insured, is supposed to be equal to the amount to be paid at death or on the termination of the policy. To this are added the cost of administration, and in mutual companies any surplus over and above the amount actually needed to secure the amount insured is refunded to the policy holder by various methods. A great deal of difference arises between the amounts seemingly necessary to be charged as premiums based on the mortality tables and the amount which actual experience has proven to be necessary. The difference is largely due to the fact that the mortality tables are tables including the whole community—infants, the infirm, the crippled, and uninsurable; while life insurance companies have their actual experience among carefully selected lives.

Having thus rapidly outlined the groundwork of life insurance, we shall defer for another article further details, such as the nonforfeiture system, terms of contract, tontines, the difference between mutual and stock companies, and what is still more important to the reader, the relative advantages and disadvantages of various systems of insurance as practiced in the United States. The subject is important and cannot be thoroughly treated of in one or two short articles.

(To be continued.)

CARE OF THE TEETH.

A BOSTON DENTIST ADVISES THE USE OF ONLY WATER WITH THE BRUSH.

"What should a man use to clean his teeth?" was the question asked of a well-known dentist recently.

The dentist immediately replied: "Nothing but water. There are more good teeth ruined by so-called dentifrices than by all other causes in the world put together. The object of the makers of these dentifrices is, of course, to produce a preparation that will, with very little rubbing of the brush, make the teeth look perfectly clean and white. To accomplish this they put pumice stone, and sometimes strong alkalies, in their preparations. Pumice stone will unquestionably take all the enamel with it. An alkali will make a yellow tooth look white in a few seconds, but before a week has passed it will have eaten away nearly all the enamel and utterly destroyed the tooth. In walking along the street you often see a 'fakir,' by way of advertising his patent dentifrices, call a small boy from the crowd near by, and opening the boy's mouth, rub the dentifrice on his dirty teeth, and in a minute almost take off all the tartar and make the teeth look perfectly pure and white. Now, a man like that fakir ought to be arrested, for he has forever destroyed the boy's teeth. His preparation, composed of a powerful alkali, is eating away the enamel of the boy's teeth, and in a few months the boy will not have a sound tooth in his head. The dentifrices, composed chiefly of pumice stone, are not as bad as those containing an alkali, because they will not destroy the teeth so quickly; but, if used habitually, they will as certainly destroy them in the end. I should advise a man by all means to use no dentifrice of any description, unless it be prepared chalk. If this is used not oftener than once a week it will not injure the teeth, and may help to cleanse them, but it should on no account be used every day. Orris root does the teeth no harm and gives a pleasant odor to the breath; and if all our dentifrices were composed simply of orris root and prepared chalk they would be harmless enough, if not beneficial. My own plan is to use a moderately hard brush and plenty of cold water, and nothing else, and my teeth are in excellent condition. If people would only pick their teeth carefully after each meal, making sure that not the slightest particle of food remain near the gums or between the teeth, and would, also, before retiring at night, run a piece of soft thread through their teeth, they would not have any necessity for a dentifrice. Of course, sweetmeats and candies are bad for the teeth; so is smoking, or taking very hot or cold drinks; but, bad as all these undoubtedly are, I really think the worst enemy the tooth has is the so-called dentifrice. Take the advice of a dentist and never use anything for your teeth but a brush and good cold water."—*Boston Gazette.*

HINT FOR HOUSEKEEPERS.

A NEW PROCESS FOR SAVING LABOR IN THE FAMILY WASHING.

Wash day is a day of torment, not only to the lady of the house because of its attendant discomforts, but to the male members of the family as well, and still more so to the females who have to stand over the tub and absorb the steam as well as tax their muscles in reducing the soiled linen to a comparatively clean state.

A good many compounds have been invented to reduce the labor of the washerwoman, but the insuperable objection to most of them is that they rot the fibre of the cloth subjected to their action, and in the long run "cost more than they come to." It is good news for housekeepers, therefore, that washing can be made easy without detriment to the fabric—not only that, but that the garments can be brought to a pure white, impossible under the ordinary manipulation—at an insignificant cost in money and with a remarkable saving of labor.

The new process was discovered by a well-known gentleman of Pittsburg, who is too modest to have his name paraded before the public, and who has no desire to make money out of his new method. He says that if anyone who has a moderate sized washing—say for a family of four or five persons—will put the clothes to soak over night as usual, and add to the water a half teacupful of pure benzine, and then, when they are put on to boil, add another half teacupful of benzine to the water in the boiler, the dirt can be removed from them with very little rubbing; the labor of the laundress will be reduced more than one-half, and the clothes will be as white as they can be made. Some may object to the smell of the benzine, but he says that all disappears by evaporation in the process of boiling. The experiment is certainly worth trying. Benzine sells for a few cents a quart, and it is said a pint of the fluid will do for two large washings.—*Pittsburg Chronicle.*

THE COMING POWER.—Professor Thompson says that when the means of utilizing the power creating quick heating by electricity shall be better understood it will be used in every workshop for welding, forging and other purposes.

DOMESTIC DIETETICS.

SEASONABLE FOOD.

March.

MEATS. — Beef, lamb, mutton, veal, venison, ham, kidneys, liver, sausage.

GAME AND POULTRY.—Grouse, hare, pigeon, chicken, duck, goose, turkey, snipe.

FISH. — Anchovy, bass, carp, catfish, eel, flounder, halibut, herring, lobster, mackerel, oysters, rock bass, rock fish, salmon, smelt, whitefish, shrimp, trout.

VEGETABLES. — Artichokes, carrots, celery, onions, parsley, parsnips, potatoes, turnips, lettuce.

FRUITS.—Apples, oranges, bananas.

PRACTICAL RECIPES.

BROWN POTATO SOUP.—A dozen potatoes of fair size; half an onion, sliced; two quarts of boiling water; two tablespoonfuls of chopped parsley; two eggs beaten light; half a cup of milk; pepper, salt and cleared drippings for frying; tablespoonful of butter. Heat the dripping in a round-bottom saucepan and fry the potatoes (peel very carefully, so as to leave all the starch in them, then left in cold water for half an hour) and onion to a fine brown; drain, then drop them in the boiling water and cook soft. Rub through the colander back into the kettle with the water in which they are boiled; add the parsley, stir to a bubbling boil and season with pepper and salt. Heat the milk in another saucepan; melt the butter in it; add the eggs; stir one minute; take the soup-kettle from the fire; pour in the milk and eggs, and serve at once. If the potatoes do not thicken the water to a purse, roll the butter into a tablespoonful of flour and stir directly into the soup-kettle instead of into the milk.

DEVILED TONGUE.—Slice a cold boiled tongue (fresh or smoked) and fry the slices quickly in nice dripping. If you have none use butter. Chop a little onion fine and stir in before the tongue is fried. Take up the slices, arrange neatly, over-lapping one another, in a hot-water dish. Strain the fat; return to the fire; stir in a teaspoonful of browned flour, half a teaspoonful of Worcestershire sauce, a tablespoonful of vinegar, a quarter of a teaspoonful of mustard, a pinch of cayenne and half a cupful of boiling water. Stir and boil for one minute and pour over the tongue.

CEREALINE MUFFINS.—One half pound cerealine flakes; three ounces sugar; one-half pint milk; one-half teaspoonful baking powder; three eggs; one-half ounce salt; ten ounces flour. Mix together the eggs, sugar, and hot butter; then add the cerealine flakes, milk and baking powder. Pour well-greased moulds half full of the batter. Put in hot oven.

CRIMPED COD.—Cut the cod, which should be quite fresh, in handsome slices, and lay it for about three hours in spring water salted, adding a little vinegar, say one wineglassful; make a fish-kettle more than three parts full of spring water, in which a large handful of salt has been thrown, let it boil quickly, put in the cod and keep it boiling for ten minutes, it will then be done enough; take up the slices of fish, garnish with sprigs of parsley, sliced lemon, and horseradish scraped into curls; serve with shrimp and oyster sauce.

HOMINY MUFFINS.—One large cupful white flour, two two teaspoonfuls salt and two teaspoonsfuls Horsford's baking powder; mix together while dry. Then add two cups cold boiled hominy, beaten smooth; three eggs, one-half cup melted butter, two tablespoonfuls white sugar, and sweet milk enough to make a thick batter. Bake quickly.

FRIED ARTICHOKES.—Boil Globe artichokes—(there are two kinds of artichokes, Globe and Jerusalem)—remove the chokes, divide the bottoms in pieces the size desired, dip in beaten egg and crumbs, and fry in butter or drippings.

CEREALINE PIE.—Into one quart of boiling milk mix five ounces of cerealine flakes, letting them drop in gradually to prevent forming lumps; add six ounces of sugar; one ounce of butter; one teaspoonful of extract of lemon. Let it boil four minutes, stirring continuously; then beat together, and add four egg yolks with half a cupful of cream. Mix the whole thoroughly; line the pie-plate with the paste and pour the mixture into the lined pie-plate and bake in a moderately hot oven.

SLICED POTATO PIE.—Steam or boil the potatoes; slice and lay in a syrup of sugar seasoned with extract of cloves and allspice; scald and set aside till nearly cool; then place the slices evenly on the bottom of a deep pie-plate lined with crust; put in each pie a tablespoonful of butter in bits, a wineglass of brandy or Madeira wine.

GRANULATED WHEAT GEMS.—Stir two and one-half cupfuls of fine granulated wheat slowly into a liquid formed of one cupful of water and one cupful of milk, seasoned with a saltspoonful of salt, then beat rapidly until the arm is weary, and fill very hot iron gem pans well buttered, giving the batter a beating while filling, and bake immediately in a hot oven.

CORN STARCH CAKE.—One cupful of butter worked to a cream with two cupfuls of sugar, one cupful of milk; two cupfuls of flour, in which is sifted two teaspoonfuls of Horsford's baking powder; the whites, only, of six eggs, beaten to a stiff froth. Mix all these ingredients well, then add one cupful of corn starch. Beat well. Bake in a moderate oven. Will make one large loaf.

CHOCOLATE CUSTARD.—Melt two ounces baker's chocolate over the fire with a little water, and add one cupful of sugar; let this boil two minutes, then pour into a quart of boiling milk; add one tablespoonful of cornstarch dissolved in a little cold water, with a teaspoonful of vanilla, and add yolks of four well-beaten eggs. Beat the whites stiff with a spoonful of powdered sugar; put the custard in cups, and pile the whites on them.

HEALTH PRECAUTIONS.

SOME RADICAL VIEWS EXPRESSED BY A PRACTICAL THINKER.

On the evening of January 28th, Dr. Titus Munson Coan delivered a lecture in the Cooper Union, in this city, on "Health Precautions." The house was filled, the entertainment being one of the regular series of free lectures provided by Peter Cooper. Dr. Coan thought that one of the very best precautions to health that the audience could have practiced would have been to stay away from his lecture because of the ugly walking, but he was glad to see them, and started by saying that health is the piety of the body. As to the necessity for the lecture the speaker quoted Dr. Frank Hamilton, to the effect that the art of curing would not be necessary if the art of prevention were known. Dr. Coan spoke of this go-as-you-please climate, and said that proper clothing was one of the greatest precautions to health. The scheme ought to be how to keep warm and not too warm, and to vary the weight of the underclothing worn not by the month or season, but according to the temperature of the day. If one dresses too warmly in the dog days the skin becomes tender, and then when the fall and winter blasts strike him he goes down before pneumonia. To go without overcoats like the Anglomaniacs is equally foolhardy, because the frame is weakened and then come bronchitis and pneumonia. The doctor thought that every man who could afford it should follow the Duke of Wellington, who had thirteen overcoats, picked out the right one every day and lived to be 84 years old. Woolens and flannels, no matter as to the color, were the only underclothing we should wear, and all of us should have three thicknesses. In the winter they retain the heat after it has left the body, and in the summer they absorb the perspiration and permit it to gradually evaporate. Gymnastics are not as good as outdoor exercise, either walking, skating or horseback riding, for the reason that there is not the fresh air that is necessary to harden the frame. The Doctor apparently doted on horseback riding, and he also thought, in speaking of walking, that the person who took a car for a mile made a mistake and was riding away from health. He suggested that clerks and others with indoor employment should plan to walk at least half a dozen blocks a day, either in going to or leaving their offices. It would be very easy for many of them to do this if they cared for their health. The Doctor didn't believe in long walks; they were exhaustive, and, in fact, in all his recommendations he warned his hearers against rushing from one extreme to the other. Sea bathing at Coney Island and Rockaway were better than any gymnastic exercise, and one taking cold baths at home must leave the water feeling warmer than on entering the bath. "Three out of four colds are caught through the feet," Dr. Coan continued, "and the only sound prevention is to take a cold foot bath. Have it so cold that your bones will ache. It hardens the nerves. People troubled with cold feet will be cured in a week if they take cold foot baths." In the matter of eating the lecturer said that the notion accepted by thousands that we must leave the table hungry is nonsense and rubbish. An ascetic is just as bad as a glutton, and both by their conduct pave the road to disease and disability. Dr. Coan didn't think much of vegetarians. He believed we were born to eat meat. For consumptives he recommended pure air, milk, butter, starchy foods, stimulants, and food rich in fats. People with liver complaints must let sugar, starchy foods and fats alone. Nervous people should eat fish, meats and milk. Folks in the professional line and brain workers must have lots of meat, fish, milk and vegetables. The announcement was made that we have few gluttons in this country because nearly everybody is on such a dead rush. Milk, boiled, fresh and skimmed, or with a certain share of lime water and koumyss were cracked up, and young and old, nervous and dyspeptic people were told to drink milk in either of these forms. On the subject of drinking, Dr. Coan said: "Water is the most dangerous drink known to man. Rum and whiskey have slain thousands, impure drinking water has slain tens of thousands. It brings typhoid fever, cholera and other deadly diseases. Our Croton is reasonably safe from contagion on the principle that dirt is healthy. This remark refers more particularly to our Croton in the summer months." Country wells and streams are sources of death germs, and people going away this summer were advised to go where there are natural mountain springs. Our ice was spoken of as a purveyer of death because the little microbe garnered from the filtering inland streams didn't mind being frozen up for months. He blossomed out at the proper time just the same. Speaking of the use of domestic or foreign mineral waters, the lecturer advised that their indiscriminate use would be attended by just as bad results as if you went into a drug store and picked out any medicine on the shelf and used it without the advice of a doctor. Prescriptions for mineral waters were recommended just the same as for opium or arsenic. Returning to natural drinking water, Dr. Coan thought if it was boiled or filtered many a life would be saved. "Good ale or beer is a good substitute for much of the water used in this country," the lecturer continued; "they aid digestion. Wine is also good, and St. Paul knew what he was talking about when he told the people to take a little wine for the stomach's sake. Alcohol as a medicine is better than half the drugs in use now. Of course it should be remembered that excess is not advisable. Everybody shold have eight hours' sleep, and those who turn night into day must make the sleep up in the day. To learn to sleep in the day is a greater accomplishment than piano playing. It must be cultivated as an art, but once acquired its benefits are inestimable. All should have pure air rather than fresh air. The latter is not neces-

sarily the former. Winter and summer a window should be opened in the house. It will pile up the coal and wood bills, but better those than stuffy rooms. Dr. Coan believed that anybody who sat with his back to a window faced a coffin. Finally, rest and recreation, cheerful thoughts and frequent excursions into the neighboring country in the bright and warm months similar to those in France and Germany will, he said, make the body healthy, the mind will serenely reflect that good state of affairs, and we'll be happy, much or little money.

SWEETENED HOSPITALITY.

THE AMOUNT OF SUGAR USED AT THE LEADING NEW YORK HOTELS.

The Fifth Avenue Hotel uses on an average 300 pounds of sugar a day. A difference in price of one and one-half cents per pound would in a year make a difference in the expenses of the hotel of $1,642.50. The Gilsey House consumes each month 994 pounds of cut sugar, 679 pounds of powdered, 675 pounds of granulated and 348 pounds of brown, making a total of 2,696 pounds of sugar for each month, or about 90 pounds each day. The Grand Central Hotel uses about 15 barrels of sugar a month. At the Merchants' Dining Room in Duane street, one of the busiest places of the kind in town, the amount of sugar consumed is about 1,200 pounds per week. At Everett's Hotel the amount consumed weekly is in the neighborhood of 3,500 pounds. At the Grand Union Hotel it is stated that the amount consumed will approximate 120,000 pounds annually. At the Ashland House the amount of sugar consumed monthly is placed at 2,000 pounds. At the Vanderbilt Hotel four large barrels of sugar, or 1,200 pounds, are used in a month. The *World* has been looking up the matter and finds that the Hoffman House each month uses on the average of powdered sugar, 2,450 pounds; of loaf sugar, 2,600 pounds; of granulated sugar, 810 pounds; of "C" sugar, 1,300 pounds, or a total of 7,200 pounds. This is an average of about 260 pounds per day. The Grand Hotel consumes on the average 60 pounds per day, a very large proportion of which is the loaf, cut and powdered variety. The St. James consumes each month 520 pounds of cut loaf, 340 pounds of "C" sugar, 750 pounds of powdered and 270 pounds of granulated, making a total for one month of 1,880 pounds, or about 60 pounds each day. The granulated and "C" sugars are used in the hotel entirely in the preparation of the food consumed by the employees.

ELECTRIC THREADS.—If sealing wax, india rubber, Canada balsam, or any sticky substance, be poured from a cup in a melted state upon the conductor of an electrical machine it will begin to throw out threads in an extraordinary manner. When the resinous matter is very hot the fibres are large, and sometimes they may be so small as to be almost invisible. Each fibre shoots out a cylinder with remarkable speed, then breaks into minute beads, which can be made to patter against a drumhead with the noise of falling rain. The cup should be turned away from both operator and machine, or both will be covered with a wonderful sticky web. When a candle is held near, the filaments shoot into the flame, and sometimes cover the candle, though sometimes they return to the cup after approaching the flame, in consequence of discharging their electricity into the latter. Miles of these sticky threads may be drawn out in a few minutes, and the breaking into beads offers a ready means of powdering substances not easily pulverized in ordinary ways.—*Ohio Valley Manufacturer.*

DOG WOOL.—A Maine man who owns a big and shaggy and black Newfoundland dog cut off the dog's hair carefully, had it carded and spun, and got two and a quarter pounds of jet-black yarn as soft as lamb's wool.

GAS AND WATER.—Sometimes the pressure of an artesian flow of water results from a gas pressure instead of from a high head of water. Dakota, for instance, has several artesian wells 1,000 feet deep with 250 to 280 pounds pressure, but there are no high places near by to give this head of water.

IMPURE FOOD.

THE NEED OF LAWS TO PROTECT CONSUMERS.

The following is an extract from a paper on the above named subject, presented by Mr. A. A. Moss, at the Pure Food Convention, in Washington, last January:

But man, in some positions of life, is contemptibly mean! but when he swindles the poor, who earn their food and raiment by the sweat of their brows, he should be pointed at with the finger of scorn, and such a man should be marked, reprimanded and severely punished. We want laws to protect the innocent consumer and to promptly punish the offenders. Just and imperative laws, which will never trammel honest trade, but protect it. Laws which will prevent the packer of pork and meats of all kinds from redressing by chemical process and otherwise goods which en route from other places have become rancid, sour or unsalable and unfit for food; such food should be confiscated by a competent honest governmental officer appointed for such purposes. We want just and practical legislation for the supply of pure and unaltered milk for our cities. Millions of little infant mounds have beneath their green sods the sleeping remains of millions of mothers' fondest hopes. The babes sleep there; but their speechless tongues, if they could speak, would cry aloud, and their little utterances should be as epitaphs on their tombstones: "Murdered by that which was called pure country milk." Milk is a most wonderful nutriment, and it is as delicate and susceptible as it is wonderful. The very moment it is drawn from the udder it commences to change, and that is the reason why good condensed milk is the healthiest for all cities. And the inventor of that great boon should be canonized and his memory revered. Those who now manufacture the perfect article deserve the immense patronage and the praises of the community. I speak feelingly upon this milk subject, for but a few years since my physician placed me upon a milk diet. I partook of nothing else for nearly three months, "pure country milk." It nearly killed me. I happened after to think up my own case, and I now partake of condensed milk in my good cup of coffee with a careful nourishing diet, and I am still here to speak feelingly upon this vital subject.

In Europe, brewers, butchers and all venders of edibles and drinkables are compelled, for the protection of the people, to conform and obey laws which are framed especially to protect both the public and those doing an honest, legitimate business.

DIAMONDS.

THEIR FLUCTUATING VALUES.

A correspondent of the New York *Journal of Commerce* inquiring as to the relative value of diamonds now as compared with former years, that paper replies:

The value of diamonds has steadily declined from the date of the discoveries in Africa in the spring of 1867. But the depreciation is beyond comparison greatest in gems that are not of the first water. The larger part of the new diamonds brought to market during the last twenty years have been far inferior to the "old mine" stones, and it is difficult, therefore, to compare prices. A gem of the first class, perfect in form and color, that would have sold for $5,000 twenty-five years ago, could be purchased to-day from a regular dealer for less than $3,000; but stones of the same weight, not quite as white (although not so far from it as to be christened "off color"), and by no means as brilliant, may be picked up in the market for $800 to $1,000. A great many ear rings, necklaces and bracelets, of fair quality, which were purchased during the war when money was so plenty with many, have been coming upon the market for the last eight or ten years from those who could not afford to keep them, and have been very slow of sale. We have seen many pairs of ear rings that were bought of leading jewelers over twenty years ago for $2,500 to $3,000, sacrificed from the inventory of estates, in the hands of those in reduced circumstances, at from $800 to $1,200. We think the day will come when the purchasers at the latter figures will find they have made a good investment of their money.

NITROGEN.—Nitrogen will not burn, like hydrogen, nor support combustion, like oxygen; and, though not of itself poisonous, animals surrounded by it speedily die from "oxygen starvation." The specific gravity of nitrogen is .972, air being one (1). Its escape from a deep, open jar is one of the means of distinguishing it from carbonic acid.

HE KNEW.—"I wonder where they get camphor gum?" said little six-year-old Eddie Post. "Why, laws 'ee! Don't you know that? and you in the First Reader, too?" replied his playmate, Nellie Green, aged five. "Well, I'll tell you. You see the Arabs chases the camphors over the deserts till they catches 'em; an' then they knocks 'em down an' cuts their gums off."

IMITATION STAINED GLASS.—A new invention to take the place of stained glass is made of cotton and linen paper, which is dipped into a preparation of alcohol and camphor, which makes it like parchment. From this point it can be modeled and cut into remarkably tough sheets, entirely translucent, and it can be dyed with almost the whole outline colors, the result being a translucent sheet showing far more vivid hues than the best glass exhibits.

A MYSTERY SOLVED.—Dr. C. A. White thinks he has solved the mystery of what becomes of all the antlers that deer shed every year. Although the antlers when the deer is killed before they are removed will withstand all weathers for years, it is very rarely that a pair that have been shed are found. Dr. White asserts that he has discovered a small insect that attacks the antlers and within a short time after they are shed destroys them by burrowing through and through them.

EVOLUTION OF THE BAYONET.—The bayonet is said to have derived its name from the fact that it was first made at Bayonne, and its origin illustrates the proverb, "Necessity is the mother of invention." A Basque regiment was hard pressed by the enemy on a mountain ridge near Bayonne. One of the soldiers suggested that, as their ammunition was exhausted, they should fix their long knives into the barrels of their muskets. The suggestion was acted upon. The first bayonet charge was made, and the victory of the Basques led to the manufacture of the weapon at Bayonne and its adoption into the armies of Europe.

AMERICAN LONGEVITY.—Americans of the middle and upper classes—*i. e.*, those who can afford to get their lives insured—are healthier and longer lived than Englishmen. Such is the result arrived at from a study of the life insurance statistics of both countries covering the period of years since 1874. At twenty the expectation of life of American males is 40.1 years, of English males, 41.1; of American females it is 40.8 years, which is precisely the same as that of English women. After the age of 20 the expectation of life among American women slightly exceeds that of English women up to the age of 47. After the age of 35 the expectation of life of English women is better than that of Englishmen, but in American women have a 6.0 lower expectation rate than men.

SUBMARINE ELECTRIC BOAT.—A new electric submarine boat exhibited at the recent Havre Maritime Exhibition is attracting the attention of scientists. It is something over eight meters in length, two deep, and of a capacity of five tons. The shell is constructed entirely of steel. The stem and stern are flush and full, but what is lost in speed, in the opinion of the inventor, is regained in the greater safety of navigation. The motive power is furnished by a dynamo-electric machine invented by Captain Krebs, of the French navy, famous for his dirigeable balloons, in use now by the ballooning corps of the army. The engine has at times developed twelve horse power. The energy is stored in conservators, which contain neither lead nor acids, and which only weigh twelve kilograms for one horse power, whereas the storage batteries of the yacht, *Volta* weighed 100 kilograms to each one-horse power stored. The boat has made six and one-half knots an hour for five consecutive hours during the public trials.

CHOLERA CONTAGION.—Max Von Pettenkoffer, a German medical authority, considers that cholera is not contagious in the sense of being communicable directly from person to person, but that it belongs to the malarial group of epidemics, the germs of which find their way from the soil into the air, and thence through the lungs into the system. He regards good drainage and pure water as the most efficient safeguards against an outbreak.

USE OF THE MOSQUITO.—The use of the mosquito has at last been discovered. Professor Webster says that "injurious organic matter in the water, instead of decomposing and poisoning people, is changed into 'wiggle tails,' which in due time become mosquitoes, and the winged matter flies away, leaving the water purified to the extent of their ability to remove the impurities. If fish are kept in the water they eat the 'wiggle tails,' and grow large enough to serve as food for man. Thus the poisonous ingredients of impure water becomes healthful food. Without mosquitoes most marshy or swampy land would be dangeronsly insalubrious.

PHOTOGRAPHING COLOR.—Mr. Mayall, a London photographer, claims to have perfected a system of photography in colors. He takes a negative on a specially sensitized plate; from this a positive is produced on a chemically treated basis by the aid of a solar camera and a spectroscopic arrangement. The image is produced in colors on the basis without the aid of handwork or brush. The colors are said to be all hydrocarbons, specially prepared and capable of sub-division to the 180-millionth of an inch. When the colored picture is produced by chemical action the image exists between two films not more than a hundredth part of an inch in thickness. These photographs are said to be permanent and not affected by climate.

THE ARGAND BURNER.—Argand, a poor Swiss, invented a lamp with a wick fitted into a hollow cylinder, up which a current of air was permitted to pass, thus giving a supply of oxygen to the interior as well as the exterior of the circular frame. At first Argand used the lamp without a glass chimney. One day he was busy in his work-room and sitting before the burning lamp. His little brother was amusing himself by placing a bottomless oil flask over different articles. Suddenly he placed it upon the flame of the lamp, which instantly shot up the long, circular neck of the flask with increased brilliancy. It did more, for it flashed into Argand's mind the idea of the lamp chimney, by which his invention was perfected.

A CHURCH ON BOTTLES.—A church in a Wisconsin town is probably the only religious edifice in the country which depends upon champagne bottles for its drainage. When the church was built funds were very scarce, and many small economies were practiced. The congregation, on first occupying their place of worship, found that it was uncomfortably damp. The fact was mentioned to one of its members, who said: "I'll tell you how to remedy that. Go into my cellar, and you will find enough champagne bottles to build a drain with. They are often used for that purpose in England, and when once laid they will last forever, if not allowed to choke up." The bottles were secured, the bottoms deftly knocked off, and the necks abbreviated in length. Then, by placing the neck of one bottle in the bottom of another, and so on, a drain was constructed which has kept the little church "extra dry" ever since.

ELECTRIC BITS.—The *Electrical Review* describes some interesting experiments by Professor Harrison (of the veterinary school of Harvard College) with the new electrical device for controlling refractory horses: "A few days ago a valuable trotting horse, which formerly went under the name of Gray Eagle, and which has a record of 2.22, was sent to the school for treatment of a fractured jaw, which had been the result of attempts to control him. The animal had been in the habit of taking the bit in his teeth and bolting. Dr. Harrison contrived to connect the bit by two small wires along the reins with a small galvano faradic battery, which was carried in the buggy. It was so arranged that the driver could give an electric shock of greater or less intensity to the horse, but could not do the animal any injury. Dr. Harrison took care to use the contrivance only with the use of the words 'Whoa' and 'Steady.' The trial was an immediate success. The horse, after two or three shocks, at once became docile, and obeyed its driver's commands instantly. A final trial was given the horse, under trying circumstances. He came to a halt from a 2.40 gait to a walk with equal docility on the driver's order. He was tried under conditions which ordinarily would have frightened him and caused him to bolt, and the result was equally satisfactory.

TEA POISONING.—The *Popular Science News* inveighs against the abuse of tea, and it warns the young particularly against its use. Four or six cups of tea taken during each twenty-four hours will, in time, produce tea-poisoning.

LOSS FROM RUST.—A series of experiments recently made by a French metallurgist are stated to have proved that steel loses weight by rust about twice as rapidly as cast-iron when exposed to moist air. Acidulated water was found to dissolve cast-iron much more rapidly than steel. This would indicate that steel bridges are less affected by the acids contained in the smoke of locomotives than iron ones.

SUNFLOWER DISINFECTION.—It has been stated that since the sunflower has been cultivated on certain swamps of the Potomac malaria fever has decreased. At the mouth of the Scheldt, in Holland, it is stated that similar results have been observed. The sunflower emits large volumes of water in the shape of vapor, and its aromatic odor, as well as the oxygen it exhales, may have something to do with the sanitary influence in question.

A USEFUL APPLIANCE.—Mr. Ernest Max Fasoldt, a manufacturing optician of Albany, N. Y., has just received a patent on a very clever contrivance as a handle for the incandescent electric light. It is a flexible standard so arranged that the lamp can be introduced into the throat, or wound, or any incision, for the sake of making medical examination. The handle will bend into any required position, and can be returned to its original form without breaking the electric circuit.

BUSINESS NOTES.

THE OLD ESTABLISHED AND FAMOUS OYSTER HOUSE OF DORLON & SHAFFER.

No stranger visiting New York can claim to have seen all the famous houses of the Metropolis where good living is dispensed in an unexceptionable manner until he has looked in upon the establishment of Dorlon & Shaffer at Fulton Market. The most tempting and juicy oysters and other shell-fish delight the palate of the epicure and warm the cockles of his heart with a satisfaction peculiar to a born *bon vivant*.

The new and commodious Fulton Market shelters the cosy quarters given up to the good living, as the old Fulton Market of a former day greeted the belles and beaux of a former generation who saw nowhere else such luscious bivalves as those of Dorlon & Shaffer. It is so today, no other oysters are served in so tempting a manner. The caterers named have the knack of selecting the best of everything, and their life long experience, exquisite taste, and culinary accomplishments, cause hundreds of people to travel a long distance once or twice a week to indulge in a fry, roast, stew, or on the half-shell, as may seem to them most agreeable.

Besides oysters, the firm serve steaks, chops, and every delicacy in its appropriate season. Their number is 187 Fulton Market, and they have no other place of business, and people should not be deceived by pretenders in any guise with similar sounding names or otherwise.

The oyster and lunch-room of the concern is the resort of the most wealthy and fashionable people, and the establishment is open from five o'clock A. M. until midnight, and is constantly thronged by residents and strangers. Hotel parties and families are supplied with oysters and clams of the choicest quality, and in every desirable style. Special attention is given by the house to packing oysters for the European market, and they have met with decided success, and their export trade is large and is constantly increasing.

The facilities of the house are unexcelled, and they are constantly adding to their fame both at home and abroad, and no other country can boast of having in the same line a patronage that is world-wide, and that has attracted people of eminence to its tables residing in the four quarters of the globe.

MEN OF MARK.

A. D. THOMPSON.

The subject of this sketch has had a life-long experience as a caterer, and it is no injustice to others to say that he stands at the very head of his profession and is thoroughly proficient in every department of the culinary art. Mr. Thompson established himself in business as the proprietor of a restaurant in 1844, and the location was at the corner of Pine and Nassau streets, where he conducted business most successfully for three years. From there he removed to 23 and 25 Nassau street, next to the old Custom House, where he gained a host of friends and secured well deserved fame for perfect cooking and the most delicious and appetizing viands; and for the thirteen years succeeding his removal to that most favorable location he was patronized by leading merchants, bankers, insurance officials and prosperous men of the town. The next removal was up-town to 292 Broadway, where he has been for the last twenty-eight years. His restaurant is a veritable landmark, and daily attracts to its elegantly fitted up and spacious quarters, customers that have patronized him, dined and wined at his table for several successive years, and they find no other place half so enjoyable. They appreciate the kindly and courteous manners of the host, the perfect order that pervades every department, which is thoroughly clean, well ventilated and inviting. The dishes are gotten up with consummate taste, skill and in modern style, and are served in the most admirable manner by waiters of discretion and politeness. Every substantial and luxury that comes to the New York market and is good for food, can be found on the bountiful tables of this establishment, and the excellent reputation gained by years of substantial service in ministering to the wants of the inner man have been heralded in every considerable town in America, and is even known and appreciated in the principal cities of Europe and other portions of the world. The writer of this article was born in the city of New York, and has lived here sixty years, and he unhesitatingly says that Mr. Thompson is the most courteous and polite gentleman it has ever been his fortune to meet.

INDOMITABLE PERSEVERANCE.

MR. F. SCHUMACHER.

If an example is wanted of what industry, perseverance, intelligence and self-will can accomplish when judiciously and earnestly applied to the furtherance of any business object, we need only point to the wonderful career of Mr. F. Schumacher, of Akron, Ohio. He commenced life without any adventitious aids in the path of fortune, and in spite of difficulties that would have disheartened the majority of men, he worked his way to a first class position in the mercantile world which he still occupies with constantly increasing success. Somewhat recently he organized the F. Schumacher Milling Company of Akron, O. The new company consolidated with the Akron Milling Company and occupy premises erected on the site of mills formerly destroyed by fire, and the concern has an abundant capital and the mills have a capacity of over 3,000 bbls. per day. The capacity of the works consequently afford every facility for extensive and economical production, such as the celebrated rolled avena and oatmeal, rolled and cracked wheat, corn starch, corn meal, farina, pearl, barley, parched farinose, (which is cooked in two minutes and is delicious), amber and white wheat, graham flour, as well as the famous F. S. "new process," Cascade and other flours. The demand for the above merchandise is constantly increasing both in this country and for export demands. The able and efficient agent of the company in this city is Mr. Charls Muns, of No. 41 Water Street, New York, and he can supply any demand for the standard preparations already named in the most expeditious manner. He is an able and far seeing merchant, and is a credit to the busines men of the metropolis.

THE HARLEM SAVINGS BANK.

T. B. TAPPEN, ESQ., PRESIDENT.

The annual report of the Harlem Savings Bank presents a most gratifying exhibit and is calculated to secure the entire confidence of depositors. By this exhibit it appears that the resources of the bank at the commencement of the year amounted in the aggregate to $3,627,937.99, as compared with $3,095,309,24 for the year previous. The assets are wisely, safely and profitably invested in desirable and approved securities, and of this amount the bank has on hand in cash or on deposit $260,033.00. There was due depositors at the beginning of the year the sum of $3,375,464.78, as compared with $2,876,242 82 for the year previous. The surplus is $252,473.21, as compared with $219,066.42 at the commencement of the year 1887. The able and efficient President of the bank is Mr. T. B. Tappen, who has occupied that position for the last twenty-three years, and it is in great measure due to his admirable executive talents, and the energy and aid of his capable assistants, that the bank shows its present prosperity. The bank is located at 2281 Third avenue in a neighborhood that is constantly improving, and its business facilities will compare most favorably with that of the best portions of the metropolis. Mr. Tappen, as well as the bank, enjoys in a marked degree the good wishes of the entire mercantile and financial community, and the conservative methods which prevail at this institution are in every respect commendable and praiseworthy.

"SPRING FEVER."

The vast number of people who, as winter dies away, complain of being sick or of feeling miserable, have but one answer to the friendly query as to what may be their ailment, and that is "Spring Fever." At first sight, the response seems vague, unintelligent, and even ridiculous. There are so many and varying disorders attached or incidental to the vernal season, that, apparently, no one word can properly cover and express them all. The commonest is biliousness, or bilious fever. Then there are the disorders which express themselves in a feeling of malaise, or uneasiness, in a yellowish or brownish discoloration of the eye-balls, in a sodden, clammy and dead-looking skin, in constipation and irregular or abnormal action of the bowels and kidneys. Bad breath, furred tongue, and night-sweats are other and often-occurring symptoms. Extreme lassitude, inability to work or to fix the attention for a long while on any particular topic, slight pains in the muscular tissues similar to those of rheumatism, loss of appetite and indigestion that at times approaches dyspepsia, are almost as common as the foregoing.

All of these widely differing troubles are popularly ascribed to Spring Fever, and the ascription is based upon a truly scientific foundation. They represent an unhealthful condition of the human system produced by the same or similar causes, and consisting of the same or similar factors. The particular disorder, or symptoms, which afflict the individual merely represent his weak point or spot Just as every rope has some strand whose fibres are poorly laid at some place, every chain has one link that is weaker than any of the others, so every human organization has some organ, function, or part that is weaker than all the rest. Here a disordered system or a weakened constitution first makes itself manifest. Where a man's liver is impaired, biliousness, so-called, or a bilious fever, appears. If the nervous system is in an unhealthful state and the vitality low, lassitude, malaise, sleeplessness, or nervous prostration will probably ensue. Gastric delicacy, in the same wise, becomes indigestion. Enteric inactivity assumes the more objectionable phase of constipation.

In treating this long series of ills, it is folly to attack the symptoms. If the attempt appears to succeed, there is no real improvement, but merely a change of symptoms. The real cause or the seat of the trouble is the unhealthful condition of the human system, and this, in such a case, has not been affected. The only true course is to relieve this condition, which, when done, does away with the symptoms altogether. If the condition be relieved or changed in time, the subsequent disorder, no matter what its nature, is prevented, and health, perfect health, is restored.

The condition to which reference has constantly been made is that which is produced by the blood becoming impure and the vital functions in consequence becoming inactive and weak. It results largely from the use of rich, heating foods and drinks, the late hours, the intense changes in temperature, and the varying amount of clothing which mark social life towards the close of the winter season. The impurities accumulate, and finally a break-down occurs. What, therefore, is needed is a superior blood-purifier that will cleanse the life currents promptly and thoroughly, and at the same time stimulate all the excretory functions of the body. This may be effected in various ways, but the surest, most satisfactory and the only scientific method is to employ the Sarsaparilla made by Dr. J. C. Ayer & Co., of Lowell, Mass. This is simply a perfect combination of the fresh Honduras Sarsaparilla with other hardly less valuable blood-purifiers and with the familiar alterative, the iodides.

Its action is mild, pleasant, painless, and certain. It expels all humors from the organization, tones up the vital functions, and, with noteworthy celerity, destroys every vestige of "Spring Fever." Its use means restored health and strength, and what is almost as grateful to people of refinement, a handsome complexion, bright eyes, and a sweet breath. It is no nostrum nor secret preparation in any respect. Its formula is printed and published broadcast, and is borrowed by numberless imitators the world over. Ayer's Sarsaparilla is a blood-purifier pure and simple. For any and all diseases which take their rise in impurities or humors, it is the best and the only true medicine extant.

BAKING POWDERS.

BY PROF. DOREMUS, OF BELLEVUE MEDICAL COLLEGE, NEW YORK.

Elaborate experiments on the effect of the residue left by cream tartar and other baking powders on gastric digestion, showed that the digestion of albumen by gastric juice was greatly retarded by the residue which would be left in biscuit made by cream of tartar baking powders. Besides retarding the digestion of albumen, it was observed that the tartrate residue rendered the mass liable to fermentive changes.

That the phosphates can have any detrimental influence in either gastric or intestinal digestion is improbable, since the juices of the digestive organs contain these salts in relatively large proportion. Indeed, at one time, the acidity of the gastric juice was considered by many to be due to the presence of phosphoric acid in combination. Practically, the "acid phosphate" as prepared by Prof. Horsford, has been found to act with great benefit in some types of dyspepsia.

While there are many baking powder mixtures of quite dissimilar composition, yet they have essentially but one office, that of raising bread. Their action may take place at the time of kneading or subsequently. They may possess some advantage in regard to cost or quantity to be used, in the residue, if there is any, being either small or less injurious than some other; but in all cases save one, the element of adding a nutritive character to the bread is entirely lacking.

Unless a phosphate form one of the ingredients of a baking powder there is no residue left of nutritive value.

We are in the position to-day to select from among many of approximately equal value in other respects, a powder (Horsford's) which shall, through the foresight of one versed in science, surpass all competitors in possessing the additional quality of restoring or adding to the flour nutritive elements.—*Scientific American.*

MAGGI'S BOUILLON.

Sometimes titles, though apt and felicitous in every respect, conceal rather than reveal the excellent qualities of the article which they name. No better illustration of this fact can be found than in the new food article just introduced into the American market, under the title of Maggi's Bouillon. As a matter of truth it is far more than any bouillon simple or concentrated, being nothing more or less than one of the most delicate and delicious extracts of beef that have ever yet been produced by the scientific manufacturers of either Europe or the United States. In appearance it is a thin, clear liquid, of a rich, red-brown color, a warm and luxurious flavor, a mild and agreeable, nutritious and easily assimilated body. Unlike many extracts, liquid beefs, and similar carniferous preparations, it is totally devoid of the torrefaction flavors which vary in intensity from dentists' creosote to a suggestion of smoky bacon. On the coutrary, Maggi's Bouillon has a rich mealy flavor and savor that surpasses the steam of a Delmonico soup. From a chemical standpoint, it leaves nothing to be desired. It is free from even a suspicion of mould or fungoid growth, which too often characterize carelessly-made goods; it contains no sediment, impurities, adulterations, or what is sometimes worse, imperceptible chemical compounds which keep animal matter seemingly sweet long after they are unfit to be used; its chief elements are what is known as albumenoids, the complex and delicate substances which make blood, brain, and brawn; and lastly it has been so thoroughly defibrinated and filtered as to show no cloudiness upon boiling or superheating. From a culinary and gastronomic standpoint, Maggi's Bouillon is entitled to equal praise. A teaspoonful in a cup of hot or cold water makes a superb beef tea, clear, wholesome, and most palatable. A tablespoonful in a cup of boiling water makes a bouillon as rich as that with which Cortlandt Palmer satifies the physical and spiritual yearnings of the élite of the far-famed 19th Century Club. Two or three tablespoonfuls to a quart of water make an admirable soup-stock, in which the cook can put the vegetables, vermicelli, pasta, grated sea-food or plants necessary to make a purée, potage, bisque or crême, and have a better result than if he spent long and weary hours over the kettle and the range. A small quantity added to gravies, meat sauces, stews, ragouts, and dry meats, poultry and game, improves the flavor and finish of the dish. To those who enjoy the suggestion of meat in salads, a talbespoonful thrown in with the oil and vinegar of a simple dressing gives a rare zest and delicacy to lettuce, endives, chicory, water-cress, *escarol*, salsify, celery, and sorrel. Not only in the kitchen, but in the sick-room and the bachelor's quarters, is Maggi's Bouillon a royal acquisition. It saves time, trouble, and cumbrous appliances, and enables every one to serve a delightful food at a moment's notice and at a trifling cost.

IMPEROYAL WHEAT AND BUCKWHEAT.

In the development of milling and bolting, there has been to a certain extent a deterioration or retrogression in the quality of fine flour, whether of wheat, buckwheat or the other cereals. New and improved scientific processes have enabled the miller to save elements of little or no value, heretofore thrown aside, and to combine them with the finer amylaceous and glutenous particles which make up a true food. For this reason the market of to-day abounds with flours, wheat, buckwheat, and others which are inferior in every respect. Made into bread, cake or other forms, they give the smallest satisfaction, and in no wise produce the results which are had from the better products of the flour mill. In some instances these flours are objectionable from a sanitary point of view, and are and have been condemned by boards of health. In the main, however, they do not reach the point of being truly deleterious, but are simply inferior, poor or low grade. Comfort, health and prosperity are so dependent upon what we eat and drink, that the consumer cannot afford, on the one hand, to use such questionable foods; nor on the other, can the grocer and marketman in the long run, to sell such foods to the exclusion of all that is superior in quality. But few citizens have the scientific appliances to test flour, even when they have the requisite knowledge. They must, therefore, depend upon the results of the investigations of experts, or else upon the great manufacturers whose name is a sufficient guarantee of the purity and excellence of their wares, and whose wares are found the length and breadth of the land. In this wise they can easily obtain and enjoy the best.

Many of the great mills throughout the land have tried to make compensation for the fact by introducing special brands of superfine, pure flour, protected by a trade mark, from imitation or fraud. The success of these special brands has been notably great since the first. Among them may be mentioned the "Imperoyal" wheat and buckwheat flour, which, though a newcomer in the markets, deserves more than passing comment on account of its hygienic, culinary and scientific excellence. The flours in question are made by the so-called new process—the difference between this and the old being, that the flour from the former contains more gluten and other albumenoids and less amylaceous, cellulose and lignose elements than that from the latter. To the touch, the "Imperoyal" is dry, crisp and elastic; to the eye, white, uniform and clean; under the microscope it is homogeneous and devoid of strange cells and foreign bodies.

The manufacturer of "Imperoyal" has wisely made their famous flours self-raising, and so spared the housekeeper the necessity for yeast and baking powder. The formula followed deserves praise from the chemist, as the bread it produces is light, finely porous, uniform in color, aeration and finish, sweet, sound and palatable. On the other hand, there is left none of that alkaline taste, soda or ammonia flavor, so common to most of the self-raising flours of the American market.

It is so well prepared that it does not mould, sour, nor attract fungoid growths, but keeps sweet, no matter how hot or cold the climate. It thus offers unusual facilities to those who conduct "light housekeeping," to camping-out parties, yacht owners, and to all cooks who may be called upon in a hurry to get up some dish which must be leavened in character.

Of equal value and greater novelty are the "Imperoyal" vacuum cooked cereals, wheat, oats and hominy. Ordinary cooking deprives a cereal of its water, changes some starch to dextrine and dextrose, breaks down the cellulose tissue, and generally produces what are known as torrefaction products. These are exemplified by the brown crust on bread and the burned taste so familiar to all novices in the kitchen. By cooking in a vacuum, a lower temperature can be and is employed. This enables the manufacturer to expel the water, make the chemical changes mentioned, and break down the cell tissues, but does not create any torrefaction products. The result is the formation of a food substance which retains the flavor and delicacy of the original cereal, which is ready for assimilation and is thoroughly palatable and wholesome, but which possesses no foreign, burned or other strange taste. In this respect the vacuum process is far preferable to the dry steam, superheated steam, or hot air processes of cooking.

The "Imperoyal" foods, taken together, give to the housekeeper a complete outfit of cereals, of the best type, prepared in the best manner, and that can be used at a minimum cost, loss of time and expenditure of trouble. From them a bill of fare can be made at a few minutes' notice, that from a culinary, economic and scientific standpoint, cannot be equalled, much less surpassed. Their low price brings them within the means of all, and their availability and convenience render them indispensable to whoever gives them a single trial.

LENGTH OF DAYS.

FIVE HUNDRED YEARS OLD—IS LIVING A LOST ART?

Is life worth living?

In the days of long ago people seemed to think it was, if the length of time they devoted to becoming acquainted with its lights and shadows is any criterion.

It would seem as though life must have afforded much of enjoyment in the good old days. Sophocles hung on until he was 130 years old, then perished by an accident. Attila was 124 when he died of the consequence of a revel on the night of his second marriage. This is a warning to young men. Epemenides was 157 at his regretted decease.

Crowns did not sit so heavily on the brows of monarchs as they seem latterly to do. Fohi, the founder of the Chinese Empire, reigned 115 years, and so did Apaphus of Thebes Egyptian. Tacitus gives 175 years to Tuisco, a German prince. Daddon, an Illyrian noble, lived for 500 years, according to Alexander Cornelius.

The art of living seems to be one of the many 'lost arts,' which the dark ages covered over, and modern civilization has not yet been able to uncover. It is certain long life was not secured by using mineral poisons as remedies for disease. That is essentially modern practice. The ancients doubtless drew on the laboratory of nature for their medicines, hence the span of their lives was naturally extended.

We know that our immediate ancestors found their medicines in the fields and forests, adjoining their log cabin homes. These natural remedies were efficacious and harmless—left no poison in the system. Physicians were rarely called in, and the people lived to rugged and hearty old age. Is it not worth while to return to their wholesome methods of cure for common ailments?

H. H. Warner & Co., Proprietors of Warner's Safe Cure, have introduced to the public a line of Log Cabin remedies, and their name indicates their character. They include a "Sarsaparilla," "Hops and Buchu Remedy," Cough and Consumption Remedy, Extract for External and Internal use, "Rose Cream," for Catarrh, "Scalpine," for the hair, "Liver Pills" and "Porous Plaster." They are carefully compounded from actual recipes, the most efficacious in use by our grandparents, and those who would like to try the virtues of old-time remedies, have an opportunity to secure the best in "Warner's Log Cabin Remedies."

A LONG AQUEDUCT.—The city of Liverpool is to be supplied with water from a reservoir in Wales, which is to be four and one-half miles long by a half a mile to a mile broad, and 80 feet deep. There will be three lines of pipe, each sixty-eight miles long, with filtering beds and secondary reservoirs. The aqueduct alone will cost $15,000,000.

A GRAND BRIDGE.—The bridge which is to be built over the Straits of Messina, which separate Sicily from Italy, will, when consummated, form one of the most striking works in the line of modern engineering. The place selected for the great undertaking is where the channel is some two and one-half miles wide and 361 feet deep. Two piers will support the viaduct of steel rails at the height of 328 feet above the water.

THE CUTTER WHISKIES.

The J. H. Cutter whiskies have stood the severest tests known to science, the jibes and jeers of their competitors, the poor imitations of dishonest dealers, reputation assassins for the last thirty years, and have earned such a high repute among good judges of fine whiskies for purity, fine flavor and health-giving properties that the owners of the trade mark can be justly proud of their goods. The firm of C. P. Moorman & Co., of Louisville, are the owners of this brand, and possess two special advantages in keeping up their well-earned reputation. The most important one is that Mr. C. P. Moorman, the head of the firm, is the best judge of fine whiskey in Kentucky, and the other almost equally important that they have unlimited capital enabling them to buy at any time any whiskey they deem worthy of purchase. These are the plain facts, and readily account for their great success.

A RUINED LIFE

is often the result of wasted opportunities, or failure to take advantage of the good opportunities offered. Those who take hold of our work, make $1 an hour and upwards. We start you free, and put you on the highway to fortune. Both sexes, all ages. No special ability or training required. You can live at home and do the work. After you know all, should you conclude not to take hold, why, no harm is done. Those who are enterprising will learn all, by at once addressing Stinson & Co., Portland, Maine.

"Let those laugh that win." Sawyer's Crystal Blue **wins** every time.

ARMOUR'S STAR BRAND.

The celebrated firm of Armour & Co., of Chicago, are putting up their "Star" brand of hams and boneless breakfast bacon for the very finest trade. Every piece has "Armour & Co." burnt in the skin, and they are the only meats so branded. For appearance, excellence of cure, and delicacy of flavor, this brand is unsurpassed. These meats are selected from light, thin skinned hogs, neither too fat nor lean; they are trimmed of all waste, and cured in mild pickle made with the best sugar, after which they are carefully smoked. Nothing inferior is used in their preparation, and they are offered to those who want the best the market affords in full confidence of their superiority. The hams are light average, and the bacon can be had in either wide or narrow strips as desired.

Armour & Co.'s other specialties are pure kettle rendered lard; boneless pig pork in small packages; boneless corned beef in small packages; boneless ham; pickled pigs' feet; summer sausage; breakfast sausage; butterine. Canned meats—Compressed corned beef; lunch tongues; whole ox tongues; compressed ham; chipped dried beef; potted ham; potted tongue; deviled ham; soups of unequaled variety and excellence.

PURE AND IMPURE ACID PHOSPHATE.

While too much cannot be said in favor of acid phosphate as a food accessory, a therapeutic agent and an industrial substance of profound value, a word of warning should be uttered in regard to the impure and often deleterious brands which unscrupulous or dishonest manufacturers too often throw upon the markets both at home and abroad. A pure acid phosphate as it is known in an acid phosphate of lime, made by beating the finest quality of calcined bone with pure sulphuric acid. The two raw materials should be carefully chosen and be pure. The treatment should be effected by skillful workmen according to the latest processes. In the fierce competition of modern trade, dealers yield to temptation and employ impure and objectionable materials, cheap contract labor, and any process which is inexpensive. Thus, for example, instead of pure sulphuric acid, they use crude oil of vitriol, containing in many instances antimony, arsenic, lead, iron, and copper. So instead of a fine bone ash, they use a mixture of bone, white clay, barytes and other worthless if not harmful mineral bodies. Acid phosphate made in this manner, not only is impure and inefficient, but the impurities are often dangerons. Nearly all the metallic poisons are accumulative in character. Unlike animal and vegetable matter which easily pass through the human system, they accumulate and after they amount to a certain quantity, begin to exert their deadly influence. The painter, from the slow absorbing of paint through the pores of the hands, eventually has lead-colic or lead-poisoning in other forms. The arsenic-worker finally dies of arsenical poisoning. Stereotypers and others who work in poisonous metals ultimately display the terrible symptoms of toxic disease. With such impure acid phosphates as these described, there is every probability of some disease occuring to their luckless user.

The only safe course is to use those acid phosphates which are known to be chemically pure. A few brands in the market belong to this class. Of them the best in every respect is that made by the United States Chemical Company of Philadelphia. This is made from absolutely pure raw materials by skilled chemists, and according to the latest industrial processes. It is uniform in color, quality and pulverulence, handsome in appearance, and unequaled in finish, efficiency and strength. It is recommended by every chemist, physician, pharmacist, housekeeper and manufacturer who has ever tried it in any wise.

"The girl I left behind me" uses Crystal Blue. **Its wonderful** tint matches her eyes.

Viburnum Compound is a tonic, anti-spasmodic, nervine, anodyne carminative without being narcotic, having a specific influence over the uterus.

UNCOVERED We will print your name and address in American Agents' Directory, for only **12** cents in postage stamps; you will then receive great numbers of pictures, cards, catalogues, books, sample works of art, circulars, magazines, papers, general samples, etc., etc., UNCOVERING to you the great broad field of the great employment and agency business. Those whose names are in this Directory often receive that which if purchased, would cost $20 or $30 cash. Thousands of men and women make large sums of money in the agency business. Tens of millions of dollars worth of goods are yearly sold through agents. This Directory is sought and used by the leading publishers, booksellers, novelty dealers, inventors and manufacturers of the United States and Europe. It is regarded as the standard Ageuts'Directory of the world and is relied upon; a harvest awaits all whose names appear in it. Those whose names are in it will keep posted on all the new money making things that come out, while literature will flow to them in a steady stream. The great bargains of the most reliable firms will be put before all. Agents make money in their own localities. Agents make money traveling all around. Some agents make over ten thousand dollars a year. All depends on what the agent has to sell. Few there are who know all about the business of those who employ agents; those who have this information make big money easily; those whose names are in this Directory get this information FREE and complete. This Directory is used by all first-class firms, all over the world, who employ agents. Over 1,000 such firms use it. Your name in this directory will bring you in great information and large value; thousands will through it be led to profitable work, and FORTUNE. Reader, the very best small investment you can make, is to have your name and address printed in this directory.
Address, AMERICAN AGENTS' DIRECTORY, Augusta, Maine.

$93 Sewing Machine Free!

We want one person in every village, town and township, to keep in their homes a line of our ART SAMPLES; to those who will keep and simply show these samples to those who call, we will send, free, the very best Sewing Machine manufactured in the world, with all the attachments. This machine is made after the SINGER patents, which have expired. Before the patents run out, this style machine, with the attachments, was sold for $93; it now sells for $50. Reader, it may seem to you the most WONDERFUL THING ON EARTH, but you can secure one of these machines ABSOLUTELY FREE, provided your application comes in first, from your locality, and if you will keep in your home and show to those who call, a set of our elegant and unequaled art samples. We do not ask you to show these samples for more than two months, and then they become your own property. The art samples are sent to you ABSOLUTELY FREE of cost. How can we do all this?—easily enough! We often get as much as $2,000 or $3,000 in trade from even a small place, after our art samples have remained where they could be seen for a month or two. We need one person in each locality, all over the country, and take this means of securing them at once. Those who write to us at once, will secure, FREE, the very best Sewing Machine manufactured, and the finest general assortment of works of high art ever shown together in America. All particulars FREE by return mail. Write at once; a postal card on which to write to us will cost you but one cent, and after you know all, should you conclude to go no further, why no harm is done. Wonderful as it seems, you need no capital—all is free.
Address at once, TRUE & CO., AUGUSTA, MAINE.

$10 REAL VALUE **FREE!**



Our new stamping outfit is **free** to every reader of this publication; it contains **100** perforated stamping patterns and includes a great variety of all sizes that are wanted. This outfit is a real work of art; no stamping outfit has ever been offered heretofore, on which anything like so much artistic ability was brought to bear. With each outfit is A BOX OF BEST STAMPING POWDER, PAD, AND BOOK OF INSTRUCTIONS, giving full directions for stamping, tells how to make the **powder** and stamping **paint,** contains instructions for **Lustre, Kensington** and **Hand painting,** tells colors to use in painting—red, white, blue, yellow, pink and other flowers; also contains hints and instructions on other matters, too numerous to mention. Bought singly, or a few patterns at a time, at usual prices, the equal of the above would cost **$10.** Although it is **free,** yet this is the **Regal Queen of Stamping Outfits** and on every hand is acknowledged to be superior, yes, very much superior, and very much more desirable than those which have been selling for **$1** each and upwards. By having **200,000** of these outfits made for us, during the dull season, we get them at first cost; the manufacturer was glad to take the order, at cost, that his help might be kept at work. All may depend that it is the very best, most artistic and in every way desirable outfit ever put before the public. Farm and Housekeeper (monthly, 16 large pages, 64 long columns, regular price 75 cents a year) is generally acknowledged to be the best general agricultural, housekeeping and family journal in America; it is entertaining and of greatest interest, as well as useful; its contributors embrace the widest range of brilliant talent. Furthermore, we have lately become managing owners of that grand monthly, **Sunshine, for youth; also, for those of all ages whose hearts are not withered;** 16 large pages, 64 long columns, regular price 75 cents a year. Sunshine is known favorably as the best youth's monthly in America. The best writers for youth, in the world, are its regular contributors; it is now quoted all over the world as standing at the head. Both papers are splendidly illustrated by the best artists. We will take 200,000 **trial year** subscribers at a price which gives us but a moderate portion of the **cost.**

FREE! Furthermore, every trial year subscriber, for either of the papers will receive **free** by mail our new **100** pattern Stamping Outfit. Trial year subscriptions will be received for either of the papers as follows: **1** subscription and **1** outfit, **32** cents; **2** subscriptions and **2** outfits, if sent at one time, **55** cents; **4** subscriptions and **4** outfits, if sent at one time, **$1.** For $1 send a dollar bill, but for less, send **1-cent** postage stamps. Better at once get three friends to join you, at 25 cents each; you can do it in a few minutes and they will thank you; papers will be mailed regularly to their separate addresses. While **trial year** subscribers are served for much **less than cost,** it proves the rule that a very large proportion of all who read either paper for a year, want it thereafter, and are willing to pay the regular price of 75 cents a year; through this, as time rolls on, we reap a profit that satisfies us.

FREE! The trial year subscriptions are almost **free,** and this the **Regal Queen of Stamping Outfits**—the best ever known—is entirely **free.** It is the greatest and best offer ever made to the public. **Large sizes** of patterns—every size that can be desired is included; all other outfits surpassed, by this, the best, the most artistic, the **Regal Queen.** Below we give a list of a few of the patterns; space is too valuable to admit of naming all: 1 Poppies for Scarf, 7 1-2 inch; 2 Tidy design, 7 1-2 inch; 3 Splendid Tinsel design, 8 inch; 4 Golden Rod, 4 inch; 5 Pond Lilies; 6 Pansies; 7 Moss Rose Buds; 8 Tube Roses; 9 Wheat; 10 Oak Leaves; 11 Maiden Hair Ferns; 12 Boy; 13 Girl's Head; 14 Bird; 15 Strawberries; 16 Owl; 17 Dog; 18 Butterfly; 19 Apple Blossoms; 20 Calla Lily; 21 Anchor; 22 Morning Glories; 23 Japanese Lilies; 24 Rabbit; 25 Bunch Forget-me-nots; 26 Fuchsias; 27 Bell Drops; 28 Fan; 29 Clown's Head; 30 Cat's Head. **70** other splendid patterns are included in this **Regal Queen** of stamping outfits—in all **100** patterns. Safe delivery guaranteed. Possessing this outfit any lady can, without expense, make home beautiful in many ways, can embroider childrens' and ladies' clothing in the most charming manner, and readily **make money** by doing stamping, Lustre, Kensington and Hand painting for others. A good stamping outfit is indispensable to every woman who cares to make home beautiful. This outfit contains patterns for each and every branch of needle work, flower painting, etc., and the **Book of Instructions** makes all clear and really easy. This outfit will do more for HOME and LADIES than many times the amount of a trial year subscription spent otherwise; no home should be with out it. The beautiful designs of this REGAL QUEEN of outfits ARE ALL THE RAGE wherever seen; when ever one or two reach a locality their fame spreads, and many TRIAL YEAR subscriptions usually follow. Many who have paid from **$1** to **$2** for outfits and were satisfied until they saw our designs, have secured our outfit and laid aside forever the others. Those who subscribe will find the papers well worth several times the trifling cost of a trial year subscription, and the majority will make up to us the loss, that this year we incur, through such a low price, by continuing subscribers, year after year, at the regular price, which all will be willing to admit is low enough. The money will gladly be refunded to any one who is not fully satisfied. Address, GEORGE STINSON & CO., Box 358 Portland, Maine.

J. HENRY HENTZ. J. P. ROBINETT. J. HENRY HENTZ, Jr.

ESTABLISHED 1793.

WHITE, HENTZ & CO.,

SOLE PROPRIETORS OF

Trimble and Pennsylvania Monogram Whiskies.

222 and 224 NORTH SECOND ST., PHILADELPHIA.

D. LIEBER, 17 South William St., New York. Col. H. A. SELIGSON, 1200 Pennsylvania Ave., Washington, D. C.

A BUSINESS BENEFIT.

ADVANTAGES TO ADVERTISERS OFFERED BY THE AMERICAN ANALYST.

It has not the limitations of a daily paper. No one reads yesterday's paper. A monthly lives at least a month, while a semi-monthly is fresh twice a month, and its audience is not limited by geographical lines, but the circulation is all over the United States and Canada.

It contains matters of interest to everyone, especially the ladies of the household, and is, therefore, sure of a careful perusal. Our audiences are intelligent and of the better classes, who have money to spend, and any well worded advertisement in our columns, giving real information, will receive a careful perusal.

Our rates are as low as our circulation affords. Large circulation and original matter cost money, and those advertisers who desire to realize these benefits must expect to pay reasonably for them.

Advertisements in our columns are permanent. Most of our subscribers bind their numbers.

Our advertisements are set up in an attractive form, sure to call the attention of the reader.

Anything that our readers want, or for which a demand is to be created, not wholly of a local nature, will pay to advertise with us.

We take only advertisements from legitimate houses of really meritorious goods, and give them all the editorial assistance they deserve; consequently our readers knowing this, have confidence in advertisements contained in our columns.

The fact that we have the best and largest houses in every branch of trade advertising with us, and that they always renew as their seasons arrive, proves beyond a doubt that they have found the AMERICAN ANALYST good advertising medium. Why should not you?

CALIFORNIA

Fine Table Wines

From our Celebrated Orleans Vineyard.

Groud Roruzthy & Co

Producers of the

ECLIPSE

CHAMPAGNE,

530 Washington St.

SAN FRANCISCO.

PARK & TILFORD. New York, C. JEVNE & CO., - - Chicago, } Agents.

THE LESLIE E. KEELEY CO.



DWIGHT, ILLINOIS.

We solicit an investigation of our system and methods and will gladly send to any one, very interesting reading matter on the OPIUM HABIT, DRUNKENNESS and their effects and cure. Physicians specially invited to examine, and if desirous of trying our remedies, liberal arrangements will be made with them. Prompt and frank attention to correspondence. The remedies are put up safely in stout boxes and sent masked. Full directions sent.

THE LESLIE E. KEELEY CO.,

Dwight, Illinois.

BETTER WEAR OUT THAN RUST.—The late Prof. Samuel D. Gross at a dinner given to him in Philadelphia on April 10, 1819, said: "After fifty years of earnest work I find myself still in the harness; but although I have reached that age when most men, tired of the cares of life, seek repose in retirement and abandon themselves to the study of religion, the claims of friendship, or the contemplation of philosophy, my conviction has always been that it is far better for a man to wear out than to rust out. Brain work, study and persistent application have been a great comfort to me, as well as a great help; they have enhanced the enjoyment of daily life, and added largely to the pleasure of the lecture room and of authorship; indeed, they will always, I am sure, if wisely regulated, be conducive both to health and longevity. A man who abandons himself to a life of inactivity, after having always been accustomed to work, is practically dead."

SILK WORM SENSITIVENESS.—During the past two seasons E. B. Poulton has made observations which prove that the silk of at least three species of English moths is greatly affected in color by environment at the time of spinning. The cocoons were dark brown when the larvæ had been placed in a bag of green leaves, and white when they had been freely exposed to light in the neighborhood of white surfaces.

Natural Lithia Water.

FARMVILLE LITHIA WATER

FROM VIRGINIA.

—Not only Relieves, but—

CURES

Bright's Disease, Kidney Troubles of all Kinds, Rheumatism, Rheumatic Gout, Dyspepsia, Bladder Troubles, Diabetes, Calculi, Albuminuria. Without Taste or Odor. An Unapproachable Record in Results.

Sold by HAZARD, HAZARD & Co., Fifth Avenue Hotel, and other first-class Pharmacists. Pamphlet free upon application.

FARMVILLE LITHIA SPRINGS CO.,

298 Broadway, New York, and Philadelphia.

USEFUL FOR FARMERS.—Dr. A. B. Griffiths has demonstrated that iron sulphate, or copperas, acts upon the cellulose of the microscopic fungi which prey upon plants, but does not effect that of the higher plants themselves. It is therefore a remedy for the most virulent epidemic which attack field and garden crops and destroy such parasitic germs and fungi as the potato disease, wheat mildew, etc. In one English district this year's crop of winter beans has failed on account of a growth of fungus on the roots of the plants, a disease which a timely application of iron sulphate would have cured.

CONSUMPTION REMEDY.—Dr. Brown-Séquard, who has been preaching that bad ventilation and poor monotonous food are the great cause of phthisis, has exhibited to the Paris Academy of Sciences a ventilating apparatus of his invention. A reversed funnel, the shape of a lamp-shade, is placed at the end of a tube, so arranged in its curves and angles that when placed beside a bed the reversed funnel will be above the sleeper and draw up the air he breathes. The other end runs into the chimney of the room. If there be none, it is taken through a heating apparatus to an air-hole. The heat is great enough to burn the disease germs.

IRON DECAY.—The statement has recently been made by a practical iron worker of fifty years' experience that not only does the metal rot from age, but that continual jarring has the effect to weaken its tensile strength, an illustration of a familiar kind in this line being afforded by the step of a carriage, which when new may be bent back and forth without breaking, but after a few years' service will certainly break, no matter how well preserved. This same loss of tensile strength is noted in carriage springs; the poorest may be safely relied upon for a year; but even after that short time they begin to break, and those, too, of the best quality will break after years of constant and exacting service. It has been found that old crowbars made of the best Swedish iron and used by the early settlers of New England have become so rotten that they could not be welded when broken, and had an offensive smell when the welding heat was applied. Formerly all iron was wrought by the trip-hammer, which scattered all the brittle and worthless material, but rolling makes it possible to run bars through containing the poorest stock.

NATRONA BI-CARBONATE OF SODA.

(ABSOLUTELY PURE.)

NATRONA



TRADE MARK

SODA

The nature of the raw material from which NATRONA BI-CARBONATE OF SODA is made—viz., kryolith, a mineral containing *pure sodium*—insures a purity and uniformity of product which cannot be obtained from any other known material. In making BI-CARB. SODA from any other raw material, the use of sulphuric acid is a necessity, but none is used in any part of the process of making NATRONA BI-CARB.; hence its entire freedom from the slightest trace of arsenic, which is always present in ordinary soda. Its absolute purity and entire freedom from all traces of *sulphate of soda*, common salt and other impurities, render NATRONA BI-CARB. NEARLY TASTELESS, and being bolted through the finest bolting-cloth, insures the finest stage of division.

To these indisputable facts the attention of CONSUMERS of soda is specially called. They are IMPORTANT, and should influence both those who use and those who sell soda, to buy and sell NONE BUT THE BEST.

The NATRONA BI-CARB. Soda is kept in stock by almost every wholesale druggist and grocer throughout the United States, of whom it may be ordered.

Natrona Bi-Carb. Soda is unequaled by any other brand of English or American Manufacture.

PENNA. SALT MANUFACTURING CO.,

NATRONA CHEMICAL WORKS. PHILADELPHIA, PA.

ARMOUR & CO.

CHICAGO, ILLS.

PACKERS OF

Pork and Beef Products

CANNED MEATS,

ETC.,

FOR HOME CONSUMPTION AND FOR EXPORT

TO ALL PARTS OF THE WORLD.

Also,

SHIPPERS OF

Choice Dressed Beef,

MUTTON AND HOGS,

In Refrigerator Cars,

To BOSTON,

NEW YORK,

PHILADELPHIA,

BALTIMORE,

And other cities throughout the country.

CARNRICK'S SOLUBLE FOOD

FOR INFANTS AND CHILDREN.

For Mothers, Invalids, Dyspeptics & Aged People.



THE ONLY FOOD *that digests as easily as human milk, and agrees with all infants and children.*

THE ONLY FOOD *that thoroughly nourishes the child without the addition of cow's milk.*

THE ONLY FOOD *that removes from infancy all necessity, danger and annoyance of a wet nurse.*

TAKEN BY MOTHERS *one or twice a day the quantity of milk will be increased and quality at once improved.*

IF THE CHILD IS RESTLESS, *change partially from nursing to* **SOLUBLE FOOD.**

DR. STUTZER, Food Analyst for Rhenish Prussia, says: "CARNRICK'S SOLUBLE FOOD is the best of all the foods I have ever examined."

"OUR BABY'S FIRST AND SECOND YEARS," by Marion Harland. Book of 64 pages, giving careful instructions for bringing up the little ones. Sent free by

REED & CARNRICK, N. Y.



GOLD MEDAL, PARIS, 1878

BAKER'S

Breakfast Cocoa.

Warranted *absolutely pure Cocoa*, from which the excess of Oil has been removed. It has *three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup.* It is delicious, nourishing, strengthening, easily digested, and admirably adapted for invalids as well as for persons in health.

Sold by Grocers everywhere.

W. BAKER & CO., Dorchester, Mass.

LIFE INSURANCE AT ACTUAL COST.

Persons desirous of obtaining life insurance at actual cost, should write for circulars to the SECURITY MUTUAL BENEFIT SOCIETY, No. 233 Broadway, New York.

This Society claims that since its organization, the cost to a member of middle age has been *less than twelve dollars a year* for each thousand dollars of insurance.

AGENTS WANTED to Canvass for Advertising Patronage. A small amount of work done with tact and intelligence may produce a considerable income. Agents earn several hundred dollars in commissions in a single season and incur no personal responsibility. Enquire at the nearest newspaper office and learn that ours is the best known and best equipped establishment for placing advertisements in newspapers and conveying to advertisers the information which they require in order to make their investments wisely and profitably. Men of good address, or women, if well informed and practical, may obtain authority to solicit advertising patronage for us. Apply by letter to GEO. P. ROWELL & Co., Newspaper Advertising Bureau, 10 Spruce St., New York, and full particulars will be sent by return mail.

GILBERT S. GRAVES

STANDARD STARCH.

MANUFACTURED WITH ENTIRELY NEW MACHINERY AND BY LATEST IMPROVED PROCESS.

IT IS GUARANTEED to be fully equal to BRANDS SOLD AT FANCY PRICES, and MUCH SUPERIOR TO STARCH SOLD AT EQUAL PRICES.

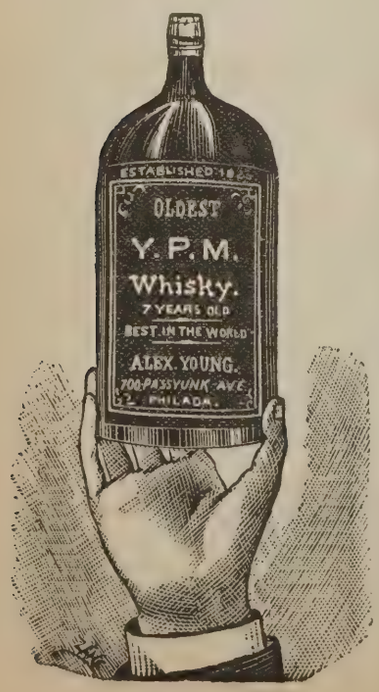
THE MIRROR GLOSS

Is the finest Starch made for the Laundry, and cannot be excelled. It will not injure the finest Laces.

THE CORN STARCH

For culinary purposes is prepared with the greatest care, from selected Corn, and is a most delicious and wholesome article of food.

ASK YOUR GROCER FOR IT.



ESTABLISHED 1823.

ALEX. YOUNG CO., Limited

DISTILLERS OF

Y. P. M. WHISKIES

DISTILLERY,

Nos. 408, 410, 412 and 414 South Street

MALT HOUSE,

416, 418, 420, 422 and 424 South Street,

STORE,

No. 700 Passyunk Avenue.

PHILADELPHIA, PA.

OUR MISSION.

WHAT THE AMERICAN ANALYST IS DOING.

FIGHTING ADULTERATION.

The steadily growing favor which the AMERICAN ANALYST is constantly receiving at the hands of both the reading and the business public is the best evidence that could be afforded of the useful field of effort it occupies. It was the pioneer journal in this country to take up the fight against adulteration, and stands to-day, by public acknowledgment, the only competent exponent of the principles involved in that momentous struggle. To this end the realm of sophistication and fraud has been thoroughly explored, and its corruptions, as far as practicable, exposed to the public view. Charlatans, adulterators, and handlers of poisonous food have been summarily and uncompromisingly dealt with. Humbugs seeking to enrich themselves, through the sale of high-sounding specifics for human ailments, have been subjected to the crucial test of thorough chemical analysis of their goods, and where the latter, as too frequently occurred, proved to be utter frauds in name, composition, and pretended effects upon the system, the real facts have been placed before our readers in order to save the public from further unconscious imposition. The veil of chemical mystery in which tricksters of this kind ostentatiously envelop their processes of manufacture, protects them as yet from the criminal laws to which other confidence operators are held amenable, and the only method for counteracting their nefarious schemes is through public exposure by the newspaper press. In exposing this species of fraud, the AMERICAN ANALYST has conferred a benefit upon the community, to which the latter is giving grateful and substantial recognition.

SANITARY AND FOOD REFORMS.

In addition to the foregoing, the AMERICAN ANALYST is in constant co-operation with the Boards of Health of this and other cities, in efforts to secure sanitary and food reforms through organized methods, and while it is nobody's mouthpiece, it is conceded to be the only popular medium through which those bodies can bring their purposes and action intelligently before the general public. Reaching as it does all classes, manufacturers, merchants, physicians, chemists and private families all over the land, its influence is exerted over a vast radius, producing results as visibly marked as they are wide-spreading.

HOUSEHOLD MATTERS.

"The American Household," edited by Miss Juliet Corson, is a department of special interest to ladies. It is very different and far superior to the ordinary cook book in that it tells the housewife suggestively what to buy, what foods are in season, as well as how to prepare the many varieties of dishes, all in a practical way easily followed. Other matters of great interest to housewives are also discussed.

VOLAPUK.

Among the striking features of this Fourth Volume will be a course of progressive lessons in the new Universal Language, Volapuk, so arranged as to enable our readers to readily instruct themselves in this commercial tongue. This series alone will be found to be worth several times the cost of a year's subscription.

SCIENTIFIC INVESTIGATION.

The business transacted in the office of the AMERICAN ANALYST does not by any means all come to the surface in the pages of the paper. Minute analyses of chemical compounds, careful assays of minerals, examinations of questionable oils or doubtful condiments, and the many subtle operations incident to laboratory work are constantly required of us by correspondents far and near, and the results in many cases are not publicly recorded. In this manner, the influence of the paper encompasses a vast radius, from every point of which we receive constant expressions of approval, verbally, and in more substantial shape.

SUBSCRIPTION $1 PER YEAR.

Considering the amount of practical information regularly embodied in its contents, together with the fact that the subscription price for an entire year is only one dollar we believe the day is approaching when the AMERICAN ANALYST will be regularly welcomed in every intelligent household in the land. Address,

ANALYST PUBLISHING CO.,
19 Park Place, N. Y.

Humorous Column, Edited by S. W. FOSS, the well-known contributor to all leading American Humorous Publications.

150,000 READERS EVERY WEEK

Fancy Work Department, Edited by EVA M. NILES, the leading American authority on Fancy Needle Work Designs.

THE YANKEE BLADE

Is now in its forty-seventh year, and is unquestionably the Largest, Brightest, Handsomest and Cheapest Weekly Family Story Paper in America. The publishers of THE YANKEE BLADE are aiming for THE LARGEST CIRCULATION IN AMERICA. With this object in view they make a special offer to new subscribers Send a trial subscription, and be prepared to know what paper to order for the coming year. All who subscribe at once will receive THE YANKEE BLADE 5 weeks for 10 cents; 13 weeks for 25 cents; six months for 50 cents; one year, $1; two years, $1.75. A SUBSCRIPTION FREE for EVERY CLUB OF FOUR NEW SUBSCRIBERS. Don't misunderstand our offer. The regular subscription price of THE YANKEE BLADE is $2, but to introduce our paper everywhere it will be sent ON TRIAL during the continuance of this offer for the special prices named above. THE YANKEE BLADE can be procured through any newsdealer at 5 cents a copy. Remittances should be made in Money Orders, Express Orders, or Registered Letter at our risk. Postal Notes are no safer than bills. Stamps taken (one cent preferred) when more convenient. All Postmasters are required to register letters when requested. Address,

POTTER & POTTER, Pubs,
43 MILK STREET, Boston, Mass.

5 WEEKS —FOR— 10 CENTS

The POPULAR AMERICAN WEEKLY.

"THE YANKEE BLADE" One Subscription Free for Every Club of Four New Subscribers, And $4. ON TRIAL, ONE YEAR.

13 WEEKS —FOR— 25 CENTS

Household Department, Edited by TREBOR OHL. Containing only authorized reports of the Boston Cooking School.

Fascinating Stories Of Adventure and Travel for Men. Stories of Love and the Family Fireside for the Ladies.

FAT — CORPUS LEAN will reduce fat at the rate of 10 to 15lbs. per month without affecting the general health. 6c. in stamps for circulars covering testimonials. S. E. MARSH Co., 2315 Madison Sq., Philadelphia, Pa. — MADE — ABSOLUTELY HARMLESS simply stopping the FAT-producing effects of food. The supply being stopped the natural working of the system draws on the fat and at once reduces weight. — LEAN

ESTABLISHED 1857.

J. H. CUTTER,

OLD

BOURBON AND RYE WHISKIES.

We are the Sole Owners and Proprietors of this Celebrated Brand of Whiskey.

C.P.MOORMAN & CO. LOUISVILLE, KY.

We Guarantee the Superior Quality and Absolute Purity of every Barrel of Whiskey sold by us under this Brand.

W. P. FESSENDEN, Agent for N. E. States, Maryland and Penn., 11 Central St., Boston.

THE OLDEST.

THE GENUINE EAU DE BOTOT BOTOT WATER
THE ONLY DENTIFRICE APPROVED BY THE ACADEMY OF MEDICINE OF PARIS, FRANCE.



FOR MORE THAN A CENTURY IN GENERAL USE IN EUROPE.
SOLE AGENT FOR THE UNITED STATES. FREDERIC REISET, 44 BEAVER STREET, NEW YORK.

THE BEST.

SEND YOUR WIFE THE American Analyst.

$1.00 A YEAR.

RHEUMATISM

is a blood disease and *Corey's Mexican Remedy a positive cure.* Purely vegetable. Not a case of failure known. So strong is our faith, we will send one bottle to any sufferer *free.* Address

THE IDEAL MEDICINE CO., 19 Park Place, New York City.

ESTERBROOK'S STEEL PENS

Leading Numbers 14,048,128 130, 135, 333, 161.



For sale by all stationers.

THE ESTERBROOK STEEL PEN CO., 26 John St., N. Y.
WORKS: CAMDEN, N. J.

1888. 1888.

THE

American Analyst.

VOLUME FOUR.

THE new Volume now beginning will contain, besides the various Departments which have given such universal satisfaction, several NEW FEATURES of great popular interest and value. Among these will be

EASY LESSONS IN VOLAPUK.

AN EXHAUSTIVE SERIAL TREATISE ON AMERICAN WINES.

FOOD ADULTERATION FROM A NATIONAL STANDPOINT.

THE LARD ADULTERATION QUESTION.

INVESTIGATION OF ALUM BAKING POWDERS.

INFORMATION FOR AMERICAN HOUSEWIVES.

And full discussions of a great variety of practical, economical subjects relating to the household and important to the housekeeper, such as can be found in no other journal in America.

— SUBSCRIPTION, $1.00 PER YEAR.—

ADDRESS:

AMERICAN ANALYST,

No. 19 Park Place,

NEW YORK.

UNEQUALLED Ask your Grocer for, and insist on having, **LEA & PERRINS'** Sauce, "The Worcestershire." It is known throughout the whole civilized world as the Best and most Delicious Sauce. **DELICIOUS.**

SCOTCH MARMALADE, Jams, Fruit and Wine, Jellies, &c.
By James Keiller & Son, Dundee.

SCOTCH BISCUITS, Albert, Water, and Oat Cake,
By Robert Middlemass & Son, Edinburgh.

RACAHOUT des Arabes, by De Langrenier, Paris.

BAY WATER, West India, (J. D. S. brand), in cases, one dozen bottles.
Sold by all first-class Grocers.

JOHN DUNCANS' SONS, 43 Park Place, New York. Agents for the United States.



BLAIR'S PILLS
Great English Remedy for Gout, Rheumatism and Kidney Complaints.
Sure, Prompt and Effective. Oval box 34, round box 14 pills.
At all druggists, and 224 William St., New York

HAND SEWED SHOES.
MYERS & BARRY.
HAND SEWED SHOES, ... $3 50
TO ORDER, ... $4 00
All grades of French Calf constantly on hand.
123 Roosevelt St. (near the Ferry), **New York.**

GOLD You can live at home and make more money at work for us than at anything else in the world. Either sex; all ages. Costly outfit FREE. Terms FREE. Address, TRUE & CO., Augusta, Maine.

Sura Cura ROBINSON'S SURE CURE FOR **RHEUMATISM And NEURALGIA,**
And remedy for diseases arising from an impure state of the blood. An antidote for **MALARIA.** Price 50 c. and $1. Sent by mail on receipt of price. Send for Circular.
R. W. ROBINSON & SON,
184 Greenwich Street,
NEW YORK.
Sura Cura



These Goods are "Par Excellence,"
Pure, Healthful and Reliable, warranted to give satisfaction in every particular. For sale by wholesale and retail grocers throughout the United States. VOUWIE BROS., Manufacturers, CLEVELAND and CHICAGO.

PROTECT YOUR HOMES!

MARLIN DOUBLE ACTION REVOLVER.

A GOOD REVOLVER no longer costs a Fortune

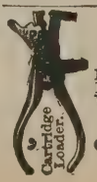
These revolvers are an exact duplicate of the celebrated SMITH & WESSON. .38 Caliber, using Centre-Fire Cartridges.



Self-Cocking, Automatic Ejecting,
FULL NICKEL PLATED, RUBBER HANDLE.
WARRANTED EQUAL IN EVERY RESPECT TO THE
SMITH & WESSON.
For sale by Hardware and Gun Dealers everywhere.
Manufactured by THE MARLIN FIRE ARMS CO., New Haven, Conn.



BEST IN THE WORLD!
MARLIN Magazine Rifle.
For large or small game, all sizes. The strongest shooting rifle made. Perfect accuracy guaranteed, and the only absolutely safe rifle on the market
BALLARD GALLERY, SPORTING AND TARGET RIFLES, world renowned. Send for Illustrated Catalogue. **MARLIN FIRE ARMS CO., New Haven, Conn.**



IDEAL RELOADING TOOLS
WILL SAVE ONE-HALF THE COST OF AMMUNITION.
Made for all sizes of Cartridges which are used in any of the following Rifles or Pistols: Marlin, Colt's, Winchester, Ballard, Stevens, Remington, Whitney-Kennedy, Smith & Wesson; also for all gauges and makes of
SHOT GUN SHELLS, PAPER AND BRASS.
Cheaper and better than any other. Send for Price List of these tools to
Ideal Manufacturing Company,
Box 1064 G. NEW HAVEN, CONN.



CUM HOC SIGNO 

COGNITUS EST

LIQUID

PANCREOPEPSINE

(WARNER'S DIGESTIVE FLUID.)

FOR THE CURE OF

DYSPEPSIA AND MALARIA

This preparation contains in an agreeable form the natural and assimilative principles of the digestive fluids of the stomach and duodenum, comprising **Pancreatine, Pepsin, Lactic and Muriatic Acids.** The best means of re-establishing digestion in enfeebled stomachs, where the power to assimilate and digest food is impaired, is to administer principles capable of communicating the elements necessary to convert food into nutriment.

It is usually given in doses of from one to two tablespoonfuls after each meal, with a small proportion of water or wine, or alone, as it is very pleasant and agreeable to the taste.

Put up in Sixteen-ounce French Square bottles, for Physician's prescriptions, and druggists can attach a label with doctor's directions.

WILLIAM R. WARNER & CO.,

1228 Market Street, Philadelphia.

22 Liberty Street, New York.

SUPPLIED BY ALL DRUGGISTS.



The "Best" Tonic

A Concentrated Liquid Extract

OF

MALT AND HOPS.

Invigorating and Nutritious.



INSURES

A

Healthy Appetite

—AND—

AIDS DIGESTION.

STRENGTHENS THE SYSTEM.

One of the Most Efficacious Remedies for Dyspepsia.

INDISPENSABLE FOR NURSING MOTHERS. THE MOST WHOLESOME TABLE BEVERAGE.

The "BEST" Tonic is manufactured from the Best Malt and Choicest Hops and neither Alcohol, Spirits nor Chemicals of any kind are used in its preparation.

MANUFACTURED ONLY BY

Specialty Department, **PHILLIP BEST BREWING CO.,**

Eastern Depot, 28 College Place, N. Y.

General Office, - - - - MILWAUKEE, WIS.

SWIFT'S

Choice Chicago Dressed Beef

—AND—

MUTTON.

CAN be found at all times in full supply and at popular prices at the branch houses in all the larger cities and is retailed by all first class butchers.

The trade of all marketmen and meat dealers is solicited for our Wholesale Branch Houses, and the public may rest assured that in purchasing our meat from dealers they will always receive the best.

SWIFT AND COMPANY,

UNION STOCK YARDS,

CHICAGO, ILLS.

Tabasco Pepper Sauce

OR LIQUID PEPPER.

Is simply the Pulp of the Ripe Pepper Extracted by Pressure.

The seed of this Pepper was obtained from Central America, and by careful cultivation in Louisiana for many years has been so improved in strength, flavor and aroma, as to have become a new variety of Red Pepper, superior to all others. The pulp is so handled as to retain all the flavor, strength, aroma and color of the ripe fruit, and to keep unimpaired in any climate. It excites the appetite, promotes digestion, and is pronounced, by connoisseurs, to be the finest condiment in the world. For medicinal purposes it recommends itself by its purity, strength and diffusible form.

Manufactured by E. McILHENNY,

NEW IBERIA, LA.

For Sale by all Wholesale Grocers.

ON THE USE OF PURGATIVES.

BY CHARLES A. HOFF, M. D., ST. LOUIS, MO.

Of all preparations contained within the *pharmacopœia,* there are none, apparently, held in higher esteem by mankind than that class of medicines, commonly known as purgatives. The busy practitioner confidently prescribes them with variable frequency, singly and combined, from the date of the writing of his very first prescription to that of his last; and the corner druggist rarely sees a day pass over his head on which he does not greet the customer who has called around to get "something to act upon his bowels." Indeed, the inevitable purgative awaits the tiny baby screaming in its first attack of colic; it is resorted to by the invalid weighted down with years of suffering and disease; and it is by no means despised by the individual in robust health, when assailed by the various petty ills, which even the most vigorous seldom entirely escape.

Notwithstanding the fact that purgatives are so generally prescribed by the physician, and so frequently resorted to without advice by the patient, they are not altogether incapable of doing harm. As everybody knows, the habit of purging the system repeatedly with salines, cholagogues, hydragogues, or drastics, is a most pernicious one; and the physician who fails to exercise a proper care, both in the selection and the administration of cathartics will sooner or later bankrupt the health of his patients as well as his own hard earned reputation.

Constipation is a complication of so many disorders, a symptom of so many diseases that its treatment in different cases depends upon very different considerations. For a simple, ordinary attack, the average doctor has been accustomed to use a simple purge, such as castor oil, sulphate of magnesia, rhubarb, senna, aloes, colocynth, blue pills, etc.; yet in none of these, can it be truly said, has there been found all that could be wished for, even in so simple a matter as a laxative. Where can we find the physician who has not been vexed and annoyed at the complaints of his patients against the purgative medicines he has been accustomed to prescribe. Some people there are who can not or will not swallow pills; many object to the nauseating castor oil; not a few oppose the use of salines since they are disagreeable both in taste and effect; many look upon all resinous cathartics as objectionable on account of their so called heating properties; aloes is objected to in pills and especially in pregnancy; elaterium is said to be excessively harsh and severe, croton oil is known to be dangerous; podophyllin causes an undue amount of griping; blue mass is avoided on general principles; and so on to the end of the chapter.

Fortunately, however, the physician of the present need no longer be placed in a dilemma when called upon to prescribe a preparation free from the faults enumerated in connection with ordinary purgatives. The pharmacist has bravely come to his aid with a formula of incomparable excellence; and this preparation, a combination of "manna, purified cathartic acid and fruit juice," although but recently brought to the notice of the medical world, is, nevertheless, already regarded as a most valuable addition to the resources of medicine.

The happy thought that suggested the combination known as the Rio Chemical Co.'s Acid Mannate justly challenges unlimited admiration and esteem, and has thus far evoked from the profession an almost universal verdict of commendation and praise. Prompt, mild and certain in its action, Acid Mannate may well be considered an ideal remedy in the constipation of pregnancy. Being pleasant to the taste, and continuing its good work without increased dosage, it is pre-eminently adapted to cases of habitual constipation. Indeed, in its wide range of adaptability as an aperient medicine it is impossible to exaggerate its importance, or allude either directly or indirectly to the vast variety of its beneficial, therapeutical properties.

The importance of laxatives is probably nowhere appreciated so much as in the constipation of pregnancy; and it is to this fact, no doubt, more than to any other, that Acid Mannate owes its great popularity and fame among remedial agents. The testimony of thousands of honorable medical gentlemen leading us to believe that, through the beneficent effect of this same elegant formula, constipation need not hereafter, as in the past, be regarded as one of the most troublesome attendants upon gestation. Moreover, the atrocious female pill of unknown composition but of dire effect, which has deluged the drug market for ages, we may consider as having had its day; and it is to be hoped that, since the physician is now in possession of a purgative especially suited to the period of gestation, female life will be less frequently harassed by the ails and aches said to be peculiar to the sex; and that miscarriages, displacements, granular erosions, congestions, headaches, dyspeptic and hypochondriacal attacks, and the whole long train of aches, pains and nervous ills will grow less familiar to the medical profession in the same ratio that the physician increases his familiarity with the actions of Acid Mannate.

A full siz d bottle of Acid Mannate will be sent free to any Physician who desires to test it, if he will pay the express charges and mention this Journal, on application to the

RIO CHEMICAL CO.,
St. Louis, Mo



PRICES ON PRESERVED FRUITS REDUCED 1ST DEC. 1885



SOLD BY THE LEADING GROCERS ON THE AMERICAN CONTINENT.

SCOTT'S EMULSION

OF PURE COD LIVER OIL WITH HYPOPHOSPHITES OF LIME AND SODA.

THE STANDARD EMULSION OF COD LIVER OIL THROUGHOUT THE WORLD.

A BEAUTIFUL CREAMY MIXTURE—ALMOST AS PALATABLE AS MILK.

Having much greater remedial power than the crude Cod Liver Oil, without any of its nauseating effects.

Its PALATABLENESS, EASE OF DIGESTION, and long tolerance by most sensitive stomachs as well as its reliable therapeutic effect, has given it special favor with the medical Profession, and receives their unqualified endorsement and support.

Possessing as it does the tonic and stimulating properties of the Hypophosphites in combination with the strengthening and fattening qualities of the Cod Liver Oil—gives it a remedial value in WASTING DISEASES, ANÆMIA or IMPOVERISHED BLOOD, EMACIATION and CONSUMPTION—unequalled by any single or combined remedy in existence. The rapidity with which delicate children fatten and grow strong on this palatable Emulsion, is very remarkable.

Samples will be sent free except express charges to any wishing to try this preparation. For sale by all druggists.

SCOTT & BOWNE, New York.

A VALUABLE BOOK FOR NOTHING.

The AMERICAN ANALYST will send to any person who will forward a New Subscription with One Dollar, a copy of

THE FAMILY CYCLOPÆDIA OF USEFUL KNOWLEDGE.



This is unquestionably one of the most interesting, entertaining and instructive books ever published. It is a universal educator for every member of the family circle, filled with useful information from beginning to end, and this information is given in such an attractive and pleasing way that the book is quite as entertaining as it is instructive. It treats of hundreds of subjects of which no man, woman or child who seeks to be well informed can afford to be ignorant, yet of which the masses of people are entirely unlearned. It contains the cream or substance of a dozen ordinary volumes, and is one of the most valuable and useful books a family can have in the house. No living man is so well informed that he may not learn from it. It is a book for the masses, for old and young, rich and poor, and will be read with pleasure and profit by all. It will likewise be found of great value as a work of reference. The book is profusely and elegantly illustrated, and is conveniently divided into departments, as follows: **Biography, History, Natural History, Travels, Manners and Customs, Etc.; The World Illustrated, Useful Arts and Manufactures, Trees, Plants, Fruits, Etc.; Great Inventions, Mining, Wonders of the Sea, Familiar Science, Law for the Masses, Statistical and Miscellaneous.** All the above subjects are fully and ably treated in this valuable book. It is a vast storehouse of useful and entertaining knowledge—unquestionably one of the best and most valuable books ever published in any land or language. No cyclopædia ever heretofore published at twice the cost is to be compared with this book in point of artistic make-up, beauty, and excellence of illustration, and quality of contents. As a holiday or birthday present for any one, nothing more appropriate or acceptable could possibly be selected. THE FAMILY CYCLOPÆDIA OF USEFUL KNOWLEDGE is a large and handsome book of 544 pages, 12mo, printed upon fine paper and elegantly bound in cloth, embellished with artistic designs in black and gold. It contains **Two Hundred and Seventy-three Beautiful Illustrations,** the original cost of which was over $5,000. The book will be sent by mail, post-paid, to any person sending a **New Subscription with One Dollar.** It is as large and handsomely gotten up as books usually sold at $1.50 and $2.00, and in the quality of its contents is worth a dozen ordinary volumes.

ADDRESS ANALYST PUBLISHING CO.,

19 PARK PLACE, NEW YORK.

QUINA-LAROCHE

A STIMULATING, RESTORATIVE AND ANTI-FEBRILE

VINOUS ELIXIR

OF THE THREE CINCHONA BARKS.

A most powerful restorative in all cases where Cinchona is indicated,

As MALARIA, EXHAUSTION, SLOW CONVALESCENCE, GENERAL DEBILITY, Etc.

LAROCHE'S QUINA possesses in the highest degree the restorative and invigorating qualities of Cinchona, which is the best known medicine for giving tone to the digestive organs. It succeeds completely in removing LANGUOR, WEAKNESS, WASTING DISEASES, WANT OF APPETITE, and for FEVER AND AGUE IT IS ONE OF THE BEST SPECIFICS.

FOR SALE BY ALL DRUGGISTS.

E. FOUGERA & CO.,

PARIS, 22 RUE DROUOT. Sole Agents for the United States.

American Analyst,

Published on the 1st and 15th of each month,

At 19 PARK PLACE, NEW YORK.

EUROPEAN AGENCIES.

On file at "American Exchange," 449 Strand, London; and American Exchange," 35 Boulevard Des Capucines, Paris.

SPECIAL PREMIUM OFFER.

For twenty-five new subscribers at $1 each, we will send a Marlin Repeating Rifle, 28-inch octagon barrel, with pistol grip, checkered stock and fore-arm; regular price of which is $26.50.

For thirty-five new subscribers at $1 each, we will send a Ballard Rifle, No. 8, Union Hill, half octagon barrel, with pistol grip, checkered stock and fore-arm, off-hand nickeled butt plate, fine target sights, etc.; regular price of which is $14.

For twelve new subscribers at $1 each, we will send a Marlin Double Action Revolver (Smith & Wesson model), full nickel plated, with rubber handle, 88 calibre; regular price of which is is $11.

All of these are illustrated in the advertisement of the Marlin Fire Arms Co., on another page.

THE ANALYST PUBLISHING CO.,
19 Park Place, New York.

IMPORTANT
TO THE
MEDICAL PROFESSION.

Send your address to THE NEW YORK PHARMACEUTICAL COMPANY, BEDFORD SPRINGS, MASS., for Illustrative Hand-book, **FREE**, containing valuable formula, special directions, and the testimonials of one thousand physicians in favor of the great merits of

HAYDEN'S

Viburnum Compound,

IN FEMALE DISEASES.

Also, the

URIC SOLVENT,

For KIDNEY DISEASES, and complaints arising therefrom.

INSURANCE.

SOME POINTS FOR FAMILY CONSIDERATION.

In the preceding article we spoke of the groundwork of insurance as specially applicable to life insurance. We will now speak of the different methods by which the surplus premiums collected from the assured are returned to them. This surplus arises from various sources, such as the interest on investments actually earned being higher than that calculated, the death rate being lower than that expected, the contingent expenses being lower than those prepared for, and from miscellaneous sources, such as profitable investments, the purchase of policies, etc. This surplus, which can be fairly considered profit, is divided in various ways. Some companies pay each policy holder his share in cash; others by adding a sum equal to the amount of insurance payable at death this cash would buy if paid in one sum; others reduce the amount of premium paid by the assured, and many offices give a choice of these three methods to the assured. The manner of calculating how this division of surplus is made varies in different companies, and these various methods are open to much criticism as to equity.

The surrender value of a policy—that is, the amount the company will pay the insured for his policy—is another matter of variation in different companies, but most of the companies to-day specify this amount on the policy.

One of the most advanced steps in life insurance has been the introduction of the so-called non-forfeiture system, which is a genuine American idea. Originally it was known as the ten-year non-forfeiture plan, and amounted really to a commutation of the premiums paid by the insured to the company—making all payments within ten years, the company on their part agreeing, after two annual payments had been made, to give to the assured a full paid-up policy for as many tenths of the original sum insured as they had received annual premiums. The principle, though considerably varied, is the same in all, being simply the applying of the reserve value of the policy to the purchase of a new insurance for a reduced amount.

The system of returning the surplus by a tontine was of later origin, and will require a special article to give all the facts pro and con. The conditions of insurance are also subjects for another article.

MODERN EXPLOSIVES.

THE INGREDIENTS OF THEIR COMPOSITION.

The composition of some of the modern high explosives, according to *Engineering*, is as follows:

Dymamite: 75 parts of nitro-glycerine and 25 of infusorial earth.

Dualine: 80 parts nitro-glycerine and 20 of nitrocellulose or gun-cotton.

Rendrock: 40 parts nitro-glycerine, 40 of nitrate of potash or soda, 13 of cellulose, and 7 of paraffine.

Giant Powder: 36 parts of nitro-glycerine, 48 of nitrate of potash or soda, 8 of sulphur, and 8 of resin or charcoal.

Mica Powder: 52 parts nitro-glycerine and 48 of pulverized mica.

Tonite: 52½ parts of gun-cotton and 47½ of nitrate of baryta.

Blasting Gelatine: 92 parts of nitro-glycerine and 8 of gun-cotton.

Atlas Powder: 75 parts of nitro-glycerine, 21 of wood-fibre, 2 of carbonate of magnesia, and 2 of nitrate of soda.

Rackarock: 77.7 parts of chlorate of potash, and 22.3 of nitro-benzol.

It will be noticed that nearly all the above explosives are composed principally of nitro-glycerine; and it is probable that in most cases the other ingredients only act as absorbents of this liquid, and really add nothing to the explosive power. The decomposition of nitro-glycerine is practically instantaneous, and the slower-acting nitrates and hydrocarbons must be left far behind when the mass is exploded. The power of all these substances is due to the paradoxical element nitrogen, which is by itself the most neutral and inactive of all the elements, but when forced into chemical combination, usually confers an element of weakness upon the entire molecule of which it forms a part.

The Standard of Excellence.

KINGSFORD'S

OSWEGO

Pure and Silver Gloss



STARCH

KINGSFORD'S

OSWEGO CORN STARCH

FOR

Puddings, Custards, Blanc-Mange, Etc.

THE PERFECTION OF QUALITY.

WILL PLEASE YOU EVERY TIME.

Always ask your Grocer for these goods.

COLDEN'S

ORIGINAL LABEL:
"Colden's Liebig's Liquid Extract of Beef and Tonic Invigorator."

LIQUID
BEEF TONIC.

AN INVALUABLE AID IN THE TREATMENT OF ALL CASES OF DEBILITY.

Established 15 Years. Endorsed by Scores of Physicians.
Essentially Different from all other Beef Tonics.
Beware of Imitations.

COLDEN'S LIQUID BEEF TONIC consists of the Extract of Beef (by Baron Liebig's process), spirit rendered non-injurious to the most delicate stomach by extraction of Fusel Oil, soluble Citrate of Iron, Cinchona, Gentian and simple aromatics. An official analysis of this preparation by the eminent chemist ARTHUR HILL HASSALL, M. D., F. R. S., and an endorsement by SIR ERASMUS WILSON, F. R. S., is printed on the label of each bottle.

Its Range of Action Embraces all Cases of Debility.

By the urgent request of several eminent members of the medical profession, I have added to each wineglassful of this preparation two grains of SOLUBLE CITRATE OF IRON, and which is designated on the label as "No. 1," while the same preparation, without Iron, is designated on the label as "No 2."

It acts directly on the sentient gastric nerves, stimulating the follicles to secretion and gives to weakened individuals that first pre-requisite to an improvement, an appetite.

☞ *I will, upon application, send a sample bottle of Colden's Liquid Beef Tonic to any physician in regular standing. Please ask your Dispensing Druggist (if he has not already a supply) to order it. In prescribing this preparation physicians should be particular to mention "COLDEN'S" viz: "EXT. CARNIS. FL. COMP. (COLDEN). It is put up in pint bottles and can be had of Wholesale and Retail Druggists generally throughout the United States.*

C. N. CRITTENTON, Sole Agent,
115 Fulton Street, N. Y.

Please Mention the AMERICAN ANALYST.

BACTERIAL ICE.

DANGERS OF THE NEW YORK CITY ICE SUPPLY.

Dr. Prudden, in the March issue of the *Popular Science Monthly*, presents some further views on the above topics, already largely discussed in the AMERICAN ANALYST, some of the interesting points of which we present below. Dr. Prudden, while urging the necessity of controlling the operations of ice companies by the authority of the State Health Department, alludes to the growing importance of the manufacture of artificial ice from distilled and otherwise purified water, which seems to be the only safe alternative in case ice cannot be obtained from ponds and lakes where the abominations of sewage have not penetrated. The following extracts from his paper will be found valuable and interesting:

He who is familiar with the researches of Tyndall and other physicists on the structure of ice, knows how little we can be aware, from the simple inspection of a lump of clear ice, beautiful as it is, how marvelously it is built up crystal by crystal into the solid form we know so well. But if we turn a beam of sunlight upon it, concentrated by a lens, the exquisite and varied stellate figures which flash out within the solid mass as the magic touch of the sunbeam releases the molecules of water from their crystal bonds, give us enchanting glimpses of the still but half-won secrets of beauty and of order with which Nature so fondly sports and still so cleverly conceals. But the resources of the physicist do not suffice to conjure all its secrets from a block of ice. It is left for the student of that phase of Nature which we call life to discover that this very type of cold impassive lifelessness may be fairly teeming, absolutely transparent though it be, with whole families and races of living things—dormant from chill, it is true, but ready at the touch of warmth, and in the presence of their food, to start on a career of growth and multiplication to which the increase in the world's populousness since the old Ice Age faded is but a poor and halting comparison.

We cannot follow the student of these lowly forms of life, which have become entangled among the ice-crystals, as he calls them back from their torpor, separates them one by one, and patiently studies their life history. It is not enough to melt the ice and look at the resulting water through the microscope. But he mingles the melted ice with a transparent compound of gelatine and beef tea, and puts the whole in a warm place, and after a few hours or days, wherever in the semi-solid gelatin a living germ from the ice had lain, a tiny speck or rounded mass appears—a "colony" he calls it—which is made up of thousands of the descendants of the old rescued and thawed bacterial ancestor. And so the biologist can separate the species one from another, cultivate them in various receptacles, and learn whether they belong among man's friends or foes.

A great deal of careful experiment has shown that water in freezing largely expels its coarser visible contaminations, and also that a large proportion of the invisible bacteria which it contains may be destroyed, even as many as ninety per cent. But still large numbers may remain alive, for many species are quite invulnerable to the action of cold. It has been found that in ice formed from water containing many bacteria, such as water with sewage contamination, the snow-ice almost invariably contains many more living bacteria than the more solid, transparent part; so that the snow layer should be especially avoided in ice obtained from questionable sources.

Unfortunately, the bacteria which cause typhoid fever are not readily killed by cold, and may remain alive for months, fast frozen in a block of ice. But the typhoid fever germ can be present in water, so far as we know, only when it is contaminated with refuse from persons suffering from the disease; so that, if we can be certain that our ice was cut from water uncontaminated with sewage or human waste, we have nothing to fear from its use so far as this disease is concerned. All of the pond and lake ice supplied to New York is of fairly good, and most of it of excellent quality; and no doubt the danger of contracting typhoid fever from the use of the larger part of the Hudson River ice is quite remote. But a considerable quantity of the Hudson River ice is cut just below Albany, where the stream is so greatly contaminated with the sewage of two large towns, Troy and Albany, as to be absolutely filthy. In both of these towns typhoid fever is of frequent occurrence during the period in which ice is forming, and the waste from the victims passes directly into the river. There would, therefore, seem to be a very real danger in the use of *some* of the Hudson River ice.

The responses which one commonly meets when he has occasion to point out the possibility of danger from impure ice are apt to be, "How horrid! Why do you add another misery to life?" or "Our fathers have never suffered from the use of ice, and why should we?" etc. No sanitary danger has ever been pointed out, and no improvement instituted, which had not to stem just such opposition. The cesspool has given way to the sewer, and the well to the distant water supply, in the face of the same sort of silly protest on the part of many of those whose own most vital interests were at stake—persons who ignore the fact that an ever-increasing vigilance is necessary to ward off the dangers which the aggregation of large numbers of people in cities invariably entails. The danger from the use of impure ice in New York, though widespread, is not very alarming, so far as the liability to extensive outbreaks of typhoid fever are concerned, because most of the ice which is furnished appears to be of fair quality. But if the risk of an attack of the disease can be warded off from one in ten thousand of our fellows, the gain is worth the effort. We do not need to be unduly squeamish, but it is well enough to be intelligent in the face of sanitary dangers. The ice companies, unless controlled by the State Health Department, will doubtless continue to cut and to furnish sewage ice along with the rest just as long as their customers will tolerate it. But if householders would insist upon the assurance that their ice should not come from the immediate vicinity of Albany, or from directly below other towns draining into the river, the companies would soon recognize that acquiescence in this reasonable demand is the wiser and more profitable course.

We are a long-suffering people here in New York, and if our common manifestations of patience were commendable instead of contemptible, we should be deserving of monumental record. We are, it is true, saved in a measure from swill milk, bob-veal, and numerous other abominations, by the vigilance of our health officers. But we smilingly swallow the dirt which the horse car companies order thrown upon our streets to save themselves the expense of roughening the roadway in a legitimate manner; we allow the elevated railroads to rain dust and cinders down into our eyes, and drop oil and water upon our heads and shoulders; we stumble over boxes and baskets stored upon our sidewalks; we permit political tricksters to juggle with our lives, even with Asiatic cholera staring us in the face; we breathe, in some of our most popular, expensive and fashionable theatres, air which, from lack of adequate ventilation, rivals that of crowded tenements and the steerage of stuffy steamships, and in innumerable other ways are the victims of the money-making and money-saving instincts of our fellows. But, after all, the complacency with which we swallow the frozen filth which some of the ice companies at times deliver at our doors—albeit often very clear and harmless in appearance—because it is cheaper for them to harvest it where the sewers empty than elsewhere, affords a spectacle of self-abasement as melancholy as it is disgusting. If the householder be not brave enough to encounter the scorn of the ice dealer, or is too tender-hearted to witness the picture of injured innocence which he often presents when the details of his business are called in question, the ice which is used for drinking purposes may be put in a separate receptacle, so as not to come directly in contact with the water.

BURNETT'S
PERFECTLY PURE HIGHLY CONCENTRATED
Standard Flavoring
EXTRACTS

THE superiority of these Extracts consists in their

PERFECT PURITY AND GREAT STRENGTH.

There is no subject which should more engross attention than the purity of the preparations which are used in flavoring the various compounds prepared for the human stomach.

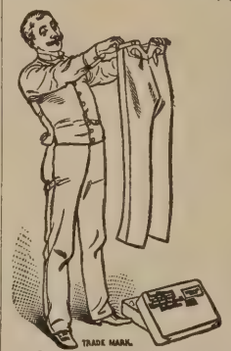
They are not only true to their names, but are prepared from fruits of the best quality, and so highly concentrated that a small quantity only need be used.

JOSEPH BURNETT & CO., Boston, Mass.

THE FAMOUS CUSTOM MADE

PLYMOUTH ROCK $3 PANTS

Full Suits and Overcoats at proportionate prices.



We sincerely believe that never before have we been able to offer our customers so good and stylish a line of **SPRING GOODS** as now. Our line of **Cheviot Suitings**, guaranteed absolutely all wool, is **particularly** remarkable. Our smooth-faced

DO YOU WEAR PANTS

goods also are very carefully selected to suit our trade, whose wants we know now from long experience. For 6 cents we mail you 20 samples of these cloths, self-measurement blanks so accurate that we guarantee a fit. Also **if you mention** this paper we send you a good 48-inch linen tape-measure. Or if you must save time, send us your **waist, inside leg, hip knee** measures, together with $3, and 35c. to prepay express or postage. We guarantee the safe delivery. **For any cause** a customer of ours may return his goods and receive back his money or a new garment, a guarantee of which statement may be obtained by writing to the American Express Co. (capital $20,000,000), at Boston. **N. B.—In buying goods by mail, it is a good rule to send money only to concerns that are well known throughout the country and avoid the countless imitators that spring up for a day to compete** with old and regular establishments.

PLYMOUTH ROCK PANTS CO.,
18 Summer Street, Boston, Mass.

ROBERT SHOEMAKER & CO.,

North-East Corner of Fourth and Race Sts., - PHILADELPHIA.

—— MANUFACTURERS OF ——

ABSOLUTELY PURE SPICES.

We grind all our spices from the best crude material, cleansing and separating each from all dirt or any foreign substance which may be found.

FLAVORING EXTRACTS FOR COOKING

purposes. These we prepare in the most careful manner from the finest material only. They are highly concentrated and of unequaled flavor.

JOHNSTON'S FLUID BEEF

Is a concentrated and unmedicated extract of the best beef, highly recommended for the instantaneous (by the addition of boiling water) production of a **Beef Tea**, superior in every way to that made by the usual tedious process. For the well or sick, PROFESSOR HARKNESS, *Analytical Chemist to the British Government*, **pronounces JOHNSTON'S FLUID BEEF "ONE of the most perfect foods I have ever examined."**

For "Bullion," "Consommé," indeed all soups, sauces, gravies, etc., it will be found admirably adapted and indispensable after a trial. ROBERT SHOEMAKER & CO. are the General Agents for the sale of **JOHNSTON'S FLUID BEEF** for the United States. SOLD BY DRUGGISTS AND FINE GROCERS.

AMERICAN ANALYST

—) AND (—

PRACTICAL COOK AND HOUSEKEEPER.

A SEMI-MONTHLY JOURNAL OF PURE FOOD, THE SUPPRESSION OF ADULTERATION,

AND EVERYDAY ADVICE TO THE PHYSICIAN, DRUGGIST AND DENTIST.

Office, 19 Park Place. [Entered at the Post Office, at New York, as Second Class Matter.]

VOL. IV.—No. 6. NEW YORK, MARCH 15, 1888. Whole No. 78

All Postmasters will receive subscriptions for the **AMERICAN ANALYST.**



VOLAPÜK.

A PRACTICAL COURSE OF SELF-INSTRUCTION IN THE UNIVERSAL LANGUAGE.

LESSON VI.

100.—Interrogative Pronouns (Pönops säköna).

kim, who? (masculine).
ji-kim (of-kim, kif), who? (feminine).
kis, what?
kiom, which? (masculine).
kiof, which? (feminine).
kios, which? (neuter).
kimik, what like one? what kind?
lik(o), how?
kiplad, where?
kibid, in how much?

Ex.—kim binom flen? who is a friend?
blod kiom? which brother?
lik binom pen? how is the pen?
dom kimik? what like (kind of) a house?

101.—Relative Pronouns (Pönops getefamik).

kel, who (masculine, feminine, neuter).
ji-kel (kel-ji in poetry), who (feminine).
kelos (os-kel in poetry), that (neuter).
kel may be used in any case.
ji-kel and *kelos* are used for clearness only.

102.—Who, which (that).

(kim, kel, kels).

103.—Compound Pronouns (Pönops pekosiadöl).

Compound pronouns are formed by the prefixed syllable *ai*.

Ex.—whosoever, *ai*kel; whenever, *ai*kitim; whichever, *ai*kelos; however, *ai*lik (o); however much, *ai*limödik.

104.— Indefinite Pronouns (Pönops nefümik).

On (one, man, you); *ek* (somebody); *nek* (nobody); *alim* (everybody); *sembal* (some or other, the one or other); *nonik* (none); *alik* (each, everybody); *valik(s)* (all); *bos* (something); *nos* (nothing); *ans* (some, certain); *mödiks* (several); *nemödiks* (few); *möd(ik)umiks* (divers).

Ex.—dom eka, somebody's house.
neka flen, nobody's friend.

THE VERB (DÖ VELIB).

105.—Indicative Mood Active (Dunafoma jenabid). Present Tense (Pösods patüpa).

The 1st Person Singular of all Verbs in Volapük ends in *ob*.

Ex.—löf, love; löfob, I love.
bin, the being; binob, I am.
dun, the deed; dunob, I do.
vil, the will; vilob, I will.

106.—The Second Person Singular of all Verbs ends in *ol*.

Ex.—thou finishest, finol; thou goest, golol; thou gettest, getol; thou drinkest, dlinol.

107.—The 3d Person Singular masculine of all verbs ends in *om*.

(the *m* of which shows = masculine).

Ex.—he renews, nulom; he stops, stopom; he pays, pelom; he fishes, fitom.

108.—The 3d Person Singular feminine (*she*) ends in *of*.

(the *f*, of which shows = feminine).

Ex.—she pleases, plidof; she plays, pledof; she praises, lobof; she frees, livof; she catches, fanof; she lights, litof.

109.—The 3d Person Singular neuter (it) ends in *os*.

Ex.—it rains, lömibos; it moves mufos; it rules, nomos; it snows, nifos; it serves, dünos; it bears, polos.

110.—The 3d Person Singular indefinite (man, one, you) of all verbs in Volapük ends in *on*.

Ex.—One satisfies, -saton; one cures, -sanon; man saves, -savon; (one-you), man sends, sedon; one saves, sefon; one feels, senon.

111.—The 3d Person Singular reflective of all verbs in Volapük ends in ok, which syllable is preceded by any of the affixes, ob, ol, ons, om, of, ös, on (from 105–110), as the case may be.

Ex.—*I* constrain myself, sölo*bok*.
thou hatest thyself, 'eto*lok*.
it sows itself, sovo*sok*.
yon irradiate yourself, stalen*sok*.
he stings himself, spino*mok*.

Another way of writing these examples is thus:

sölob obi; oli 'etol; sovos iki; onsi stalons; spinom oki.

II. PLURAL (PLUNUM).

112.—The 1st Person Plural (we) of all verbs ends in *ob*, with the plural *s*, that is, *obs*.

Ex.—we follow, sukobs; we seek, sükobs; we take, sumobs; we swim, svimobs.

113.—The 2d Person Plural (you) of all verbs ends in *ol*, with the plural *s*, that is, *ols*.

Plural { Ex.—you teach, tidols.
you steal, tifols.
you think, tikols.
you point, tipols.
you lift, tovols.

114.—The 3d Person Plural (masculine ends in *om*, with the plural *s*, that is, *oms*.

Ex.—they empty, vagoms.
they choose, väloms.
they wait, valadoms.
they strengthen, stenüdoms.
they warm, vamoms.

115.—The 3d Person Plural (feminine) ends in *of*, with the plural *s*, that is, *ofs*.

Ex.—they sew, nagofs.
they say, sagofs.
they clear, klilofs.
they take care, kälofs.

116.—The 3d Person Plural (reflective) ends in *ok*, with the plural *s*, that is, *oks*; which syllable is preceded by any of the affixes (ob, ol, om, of, os, on, and the polite ons) given in 111. These affixes only require the plural *s* when *oks* is separated from the verb.

Ex.—we accommodate ourselves, yumoboks.
you mistake (yourselves), pölolsok.
they (those men) enjoy themselves, gälomoks.

Ex.—you put yourselves into a passion (to two or more persons), zil*ons*oks.

Examples in which *oks* is separated from the verb:

they (those men) belie one another, nevela*toms* okis (objective case: oke, okes); they (those women) anger one another, zunofs okes (ok, .. oks, only stands in the 1st case).

117.—(1.) Volapük admits *sok* instead of *oks*, thus: obsok olsok, omsok, ofsok.

(2.) *Oks* directly affixed to the verb, and *oks* (in the objective case) separated from the verb, give a different meaning to the sentence, as:

löfomoks (or löfomsok) means, they love themselves; but löfoms okis means, they love one another.

(To be continued.)

NUTMEG POISONING.—Some people doubt the poisonous effect of nutmeg, but several cases of nutmeg poisoning have been noted in the *British Medical Journal* during the last summer. A whole nutmeg was taken in four of the cases, and five whole ones in the remaining case. In still another case the use of a half nutmeg in a hot drink was nearly fatal.

American Analyst,
Published on the 1st and 15th of each month.

Subscription, - - - - - - $1 per year.
Single Copies, - - - - - - 5 cents.
Subscriptions to foreign countries, - $1.50.

Remit by Express Money Order, Draft, P. O. Order, or Registered Letter.

Advertising rates on application.

THE ANALYST PUBLISHING CO.,
Publishers.

H. LASSING, M. D., } *Editors.*
T. P. McELRATH, }

No. 19 Park Place, ... New York.

NEW YORK, MARCH 15, 1888.

ANSWERS TO CORRESPONDENTS.

A NEW SUBSCRIBER.—Mottled German soap is a favorite soap in the West. Any practical soap maker can make it. We are glad to give information, but cannot undertake to teach trades.

R. A.—No.

GROCER.—Beverages containing alcohol can only be sold under a license. The fact that it is used by physicians does not exempt you from the penalties of the law any more than the fact that physicians prescribing whiskey does not excuse you for selling whiskey without a license.

CERVAS.—The table of analysis speaks for itself, and shows where salicylic acid has been used.

ANOTHER TRIAL FOR SORGHUM.

At brief intervals, for the last ten or fifteen years, glowing prospects have been held out to such dealers in sugar as would consent to abandon the beaten track and enter upon the manufacture of sorghum sugar. As long ago as 1879, Dr. Collyer, who was at that time Chemist of the Agricultural Department at Washington, had this to say upon the subject: "If they will give me ten acres of ground to experiment on next season, I will return twenty tons of raw sorghum sugar fully equal to the best raw cane sugar or forfeit my reputation. The corn crop of Illinois is worth about $75,000,000; if they will devote one-tenth of the acreage to sorghum of the best variety, they can raise sugar equal in value to the whole amount now imported, which is about $109,000,000." Professor Collyer also reports the success he had met with in extracting sugar from ordinary white field corn, which was remarkable enough to entitle it to a place in any sugar discussion. From an acre of land planted with corn known as the horse-tooth variety, he gathered the ears when fully ripe, and their yield of shelled corn was sixty-nine and one-tenth bushels, or over double the average yield per acre of the whole country for that year. Then from the stalks he extracted 960 pounds of raw sugar, and left something yet to be used as fodder. The idea of procuring sugar from corn stalks is not a new one and did not originate with Professor Collyer. It is said to have been long practiced in some parts of Mexico; and in a letter to John Adams from his wife, dated September 24, 1777, she gives an account of its being done in Massachusetts during the Revolutionary war. So far, however, all devices for extracting cheap and good raw sugar, either from corn stalks or sorghum, have met with ignominious failure, unless, indeed, the latest attempt, which has not yet proceeded far enough to be rightly judged, should happily prove an exception. The scheme is briefly this: A Boston company is formed with a capital of $200,000, which will be increased to $1,000,000 if the result of the first year's experiment is satisfactory. During the year they will erect three factories in addition to the one already owned by them at Fort Scott, Kansas. One of the three factories will be located at Topeka, Kansas, but the situation of the others has not been settled. Kansas towns are eagerly competing for these works, one town going so far as to offer not only the land, but a bonus of $10,000. The parent company will own a controlling share of the stock of each local company. It is unfortunate that one of the first duties of the company will be to fight the Government on their patents, the Government claiming that Professor Swenson, the patentee, made his discoveries while under Government employ. The company claim, on the other hand, to have plenty of proof that he made his discoveries before entering the employ of the Government.

CONFECTIONERS' TRICKS.

The *Weekly Confectioner* again takes up its cudgel in behalf of the chocolate manufacturers whose little game was recently exposed in the AMERICAN ANALYST. Our hesternal contemporary says, referring to our charges:

Two indictments are presented, and only two. The first charges that leading manufacturers made two or more grades of chocolate goods—one for the high priced city trade and another for a lower grade. The second charge is that the cheaper goods "injure the health of the consumer and drive out of business small but honest concerns who put up pure goods." In our previous reply to the ANALYST we said, that manufacturers of chocolate goods, like all other manufacturers, made goods to suit the market. They can find a market for one grade of caramels, for example, that will retail in large cities for one dollar a pound; but the great mass of buyers cannot afford to pay more than half that price, and a cheaper grade of goods is made to meet the wants of the majority. There is no concealment, no deception, no subterfuge about it. Every retail dealer knows this fact, *and every consumer knows it*, with the possible exception of our analytical neighbor.

The italics are our own. That is precisely the point at issue. We happen to know that "every consumer" is not aware that first-class houses manufacture inferior grades of goods and that, when he buys, as he fondly supposes, under the warranty of the maker's name and reputation, he runs a great risk of receiving something vastly different from what he bargains for. No honest, sensible person, of course, expects to receive a dollar's worth for twenty-five cents—but the average country purchaser, attracted by the high repute of a metropolitan firm, is often grossly deceived by the practice which the *Confectioner* finds it to its interest to sustain. The simple remedy for the evil would be to label such goods in such way as to indicate their respective grades of quality. Then there would be "no concealment, no deception, no subterfuge about it." At present there are all three.

SOME PERTINENT INQUIRIES.

We publish below a "spicy" communication to the State Board of Health from the late chief chemist of the Brooklyn Board of Health. The queries propounded by Dr. Bartley involve some considerations in which the public is definitely concerned, and the response of the State Board will be watched for with considerable interest. The following is the letter:

481 PACIFIC STREET, BROOKLYN, N. Y., }
FEBRUARY 28, 1888. }

Secretary State Board of Health:

DEAR SIR—From some recent inspections I have found two spice mills in this city where burnt walnut shells, bread crumbs, buckwheat middlings, corn meal and charcoal are ground with various spices for the markets. One of these, Durkee & Co., only manufacture these compounds here and send them to their warehouse in New York, where they are packed and labelled "X Pepper (Compound)" and "XX Pepper (Compound)," "Mustard (Compound)," and like names. The other house, Packard & James, send theirs out from the mill marked "Ginger, P. D.," "Pepper, P. D.," etc. This mark "P. D." is known only to the wholesale trader, not to the retailer nor customers who pay for them. Does this labelling comply with the provisions of section 3, sub-section 7 of chapter 407, Laws 1881? Are these mixtures or compounds such as are "recognized as ordinary articles of food?" If so, does the word "compound" or the mark "P. D." distinctly label the article as mixture or compound, stating the components of the mixture as required by the above action? Has the State Board of Health at any time exempted the said mixtures from the provisions of chapter 407, Laws of 1881? The above facts have been brought to the notice of the Commissioner of Health of this city, but no action is likely to be taken by him. I deem it my duty, as an inspector of the State Board of Health, to report the facts to you, that such action may be taken as you may deem proper.

Very respectfully,
E. H. BARTLEY, M.D.,
Chief Chemist, Department of Health, City of Brooklyn.

NINETEENTH CENTURY CREDULITY.

The reappearance of the star of Bethlehem is still looked for by the credulous, although there is no more reason to expect the return of this legendary star than there is to look for the reappearance of the fiery sword which, according to Josephus, hung over Jerusalem just previous to its destruction by Titus. There are thousands who have scanned the heavens this season with the expectation of beholding the wondrous star which 1900 years ago guided the wise men to the place "where the young child was." Some charlatan with a smattering of astronomy first started the theory that the year 1888 was the time for the advent of this celestial phenomenon, and notwithstanding repeated denials from leading astronomers have been published over and over again by the press throughout the civilized world, there are still those who write to the newspapers anxiously asking when this star is to be expected. Some time last autumn Venus shone resplendent as the morning star, and it had been repeatedly announced that it was Venus. But these wonder-mongers deluged the newspapers with queries as to whether this was not the long-expected star. The only foundation for the belief in the reappearance of this star is the fact that on November 11, 1572, Tycho Brahe, a renowned astronomer, discovered a radiant star of extraordinary size. It exceeded the largest planets in brilliancy, but gradually faded and entirely disappeared in March of the same year. As similar phenomena were known to have occurred before, the devout of those days were inclined to give a sort of supernatural interpretation to them, and from this came the theory that the star of Bethlehem becomes visible in cycles of about three hundred years. This theory has, however, been utterly disproved.

THE REAL REASON.

The *St. Louis Globe-Democrat*, referring to the circumstance that Dr. Fahlberg established his plant for the manufacture of saccharine in Magdeburg, asserts with positiveness that the original factories would have been built in America "if the tariff on the raw materials—coal tar, sulphuric acid, etc.—had not been kept up by the chemical ring." That may be good political gag for our St. Louis contemporary to use, but it possesses the disadvantages to unprejudiced minds of being both unsound and untrue. There are other interests besides that of Dr. Fahlberg's curious discovery to be protected here, which if allowed to languish would leave the field they now hold at the absolute mercy of foreign capitalists and manufacturers. But the real reason why Dr. Fahlberg sought the continent of Europe to manufacture his product, as he explained to us at the time, was that American operatives receive so much higher wages than are paid for labor in free trade Europe, that he could realize much greater profit there than in the United States. Let our contemporary try its teeth on the cracking of that nut.

RETARDED CULTURE.

The Boston *Popular Science News* for March says: "Some time ago a reader of the *News* wrote to the 'Questions and Answers' column desiring to know the difference between a thermometer and a barometer. As similar inquiries are not uncommon, the lack of scientific knowledge thus displayed was not especially noticed by us. It happened, however, that at a meeting in this city of a literary club, consisting of over a dozen members, the same question was recently brought up, and not a single person could answer it. All the members were highly educated, in both public and private schools and academies, and yet not one of them had had sufficient elementary instruction in science to enable him to understand the construction of these two simple and familiar instruments. It would certainly seem as if the courses of study in our educational institutions were in need of revision."

AN ALPHABET OF JEWELS.

An alphabet of precious stones has been formed—indeed, there are two alphabets, one for transparent and one for opaque jewels; but of the latter a few like turquoise, jasper and onyx hardly come under the head of precious. The alphabet of transparent jewels comprises amethyst, beryl, chrysoburgh, diamond, emerald, felspar, garnet, hyacinth, idiocrase, kyanite (more commonly cyanite, a blue mineral), lynx-sapphire, milk-opal, natrolite, opal, pyrope, quartz, ruby, sapphire, topaz, uranite, vesuvianite (a species of garnet), water-sapphire, xanthite and zercon (a Cingalese stone). It is perhaps not generally known that a large ruby is of more value than a large diamond. For a perfect ruby of five carats, it is said, a sum will be offered ten times the price given for a diamond of the same weight.

GERMS IN ICE.

Interest in the pure ice question is growing since the exposures made by the AMERICAN ANALYST and other papers of the reckless manner in which river ice is gathered for the New York market. An interesting contribution to the literature on the subject will be found in another column, in which Dr. Prudden goes into particulars as to the disease-bearing capability of what is apparently the purest ice. We commend the article to not only our New York readers, but to all residents of cities whose ice supply is obtained in the vicinity of where they live. In this metropolis, at least, Hudson River ice will be at a discount in future, unless, as is probable, the dealers manage to dispose of it under false pretenses.

A NEW EXCHANGE.

The confectioners of New York have last dropped into line with the other leading trades and have formed an association under the much abused term "Exchange." The location selected is the New York Mercantile Exchange building, at the corner of Hudson and Harrison Streets. The rooms are being handsomely furnished and fitted with cases wherein manufacturers and jobbers may exhibit samples of special or novel lines of goods. All the periodical literature, even remotely pertaining to the trade, will be kept on file, and the nucleus of a library will be established.

THE PUBLIC AND THE ICE MEN.

One of the principal officials of the Knickerbocker Ice Company, after carefully reading, one day last week, the illustrated article on impure ice, published in the February 1st issue of the AMERICAN ANALYST, emphatically pronounced it to be "bosh." He did not attempt to controvert the facts there given relative to ice gathered at the mouths of sewers being sold to ice consumers. He could not answer our facts, therefore he resorted to the usual monopolist's argument—abuse. He summed the matter up by declaring that "people must use ice and will buy it. They must buy it of an ice company, and it is none of their business where we gather it." In one word, the public be dashed!

The continuation of our valuable series of articles on "Wine" has been unavoidably interrupted in this and the preceding issue of the AMERICAN ANALYST. It will be resumed, however, in the April 1st number and continued thereafter with regularity.

PRESERVING AGENTS IN BEER.

BY C. A. CRAMPTON, ASSISTANT CHEMIST U. S. DEPT. OF AGRICULTURE.

[Taken from Report of the U. S. Dept. of Agriculture.]

We come now to what I consider the most important sophistication of beer at the present day and the most reprehensible and most deserving of repressive legislation. The use of artificial preserving agents not only introduces foreign matters into the beer which are more or less injurious, according to the nature of the material used, but also serves to cover up and hide the results of unskilled brewing or unfit materials; giving to the public for consumption, a liquor, that, if left to itself under natural conditions would have become offensive to the senses and putrid with corruption long before it is offered for sale.

The only means of preservation allowed by the authorities in Germany and France is the process called, from the name of its author, "Pasteurization." This process is entirely rational and commendable, as it conduces to the preservation of the beer by destroying the germs of unhealthy ferments, not by simply paralyzing their activity as antiseptics do, and, moreover, it introduces no foreign constituents into the beer. Liquid carbonic acid is also coming into use in some of the larger Continental breweries.

Other preservative agents extensively employed at the present day are salicylic acid, bisulphite of lime, and boracic acid.

SALICYLIC ACID.

Salicylic acid ($C_7 H_6 O_3$) was first prepared by Piria and Ettling by oxidizing salicyl aldehyd, which had previously been obtained from various vegetable sources. It was afterwards obtained from oil of wintergreen, which is nearly pure methyl salicylate, a constituent also of many other essential oils. Its artificial production from phenol (carbolic acid) was discovered by Kolbe and Hautermann in 1860, but was not put into practical use until 1874, when Professor Kolbe succeeded in producing it at a moderate cost. It is now prepared almost exclusively in this way, the cheapness of the method having driven out of the market that which is prepared from oil of wintergreen.

By this process, sodium carbolate is treated with dry carbonic acid gas and distilled at a rather high temperature, when one-half of the phenol combines with the sodium, forming sodium salicylate, while the other half is distilled over. The residue is decomposed with hydrochloric acid, the salicylic acid filtered off and washed and purified by recrystallization or sublimation. The purest salicylic acid is obtained by dialysis, by which all the tarry matters can be separated. It is composed of long acicular crystals, having a peculiar, pungent, sweetish taste. It is irritating to the mucous membrane of the nasal passages and produces sneezing when handled.

The extended use of salicylic acid it owes to its property of arresting the action of ferments. This property has been extensively investigated and it is unnecessary to go into the subject here.*

In medicine, besides its use externally as an antiseptic, it is administered very extensively internally, its chief application being as a remedy for acute rheumatic fever. Its physiological action is given as follows in the *United States Dispensatory*, fifteenth edition, page 101:

When salicylic acid is given to man in doses just sufficient to manifest its presence, symptoms closely resembling those of cinchonism result. These are fullness of the head, with roaring and buzzing in the ears. After larger doses, to these symptoms are added distress in the head or positive headache, disturbances of hearing and vision (deafness, amblyopia, partial blindness), and excessive sweating. According to Reiss (*Berlinger Klin. Wochenschrift*, 1875, p. 674), decided fall of temperature, without alteration of the pulse, also occurs; but this is denied by other observers. The actions upon the system of the acid and of its sodium salts (also ammonium salt (Martenson, *Petersb. Med. Zeitschrift* 1875, p. 343) appear to be identical, and, as several cases of poisoning with one or other of these agents have occurred, we are able to trace the toxic manifestations. Along with an intensification of the symptoms already mentioned there are ptosis, deafness, strabismus, mydriasis, disturbance of respiration, excessive restlessness passing into delirium, slow, laboring pulse, olive green urine, and involuntary evacuations. In some cases the temperature has remained about normal, but in others has approached that of collapse. The respiration seems to be characteristic, it being both quickened and deepened, often sighing. Sweating is usually very free, and the urine easily becomes albuminous. Various local evidences of vaso-motor weakness may supervene, such as rapidly appearing bed-sores at points subject to pressure, and transitory dark colored maculae on various parts of the body. In several cases death was probably produced by the acid, although there is scarcely one instance which is beyond doubt.* In certain cases the mental disturbance has been strangely prolonged, lasting for eight days. In some instances it is cheerful, in others melancholic in type. It is stated that upon drunkards the acid acts very unfavorably, violent delirium being an early symptom of its influence.

By the same authority the dose of salicylic acid to be employed in cases of acute rheumatism is given as one dram (3.9 grains) in twenty-four hours. It is excreted chiefly by the kidneys and may be detected in the urine very soon after its ingestion. Authorities in therapeutics warn practitioners of medicine against its administration to patients whose kidneys are known to be diseased, and of late years the opinion has been growing among physicians that it has a very irritating action upon these organs, many preferring the alkaline treatment of rheumatic fever on this account.

USE AS A PRESERVATIVE.

The "salicylic acid question," as it is called, has received a great deal of attention for several years in Europe, and much has been written, pro and con, on the question of the propriety of its use as a preserving agent in articles of food and drink. In France its use as a preservative in any form of food or drink was forbidden by ministerial decree on the 7th of February, 1881. This decree was based upon a decision of the consulting committee of hygiene that its constant use was dangerous to health.

In Germany its use is prohibited, except in beers intended for export to other countries where its use is allowed.

Its prohibition in France called forth a great of opposition and experiments were made and published, which were intended to show that its constant use in small doses exerted no injurous influence upon the system. Kolbe himself made experiments upon himself

* For recent information on this subject reference may be made to a paper by A. B. Griffiths, *Chemical News*, 53, 28.

* In the case recorded in the Virginia *Medical Monthly*, June, 1887, forty-eight grains of acid were taken in four hours. The symptoms were violent vomiting, headache, total unconsciousness, with stertorous breathing. Death occurred forty-hours after the first dose.

and his assistants by taking doses of .5 to 1.0 gram daily for several days, and found no appreciable ill effects to follow its use.* Whether such experiments suffice to prove its harmlessness when used for many years and without regard to age, sex, or personal idiosyncrasy is still an open question. A most interesting and exhaustive discussion of the reasons for and against its use can be found in the report of the fourth meeting of the "Independent Union of the Bavarian Representatives of Applied Chemistry, at Nurnberg, 7th and 8th August, 1885," when this body refused, with but one dissenting voice, to grant its sanction to the proposed use of salicylic acid in beer in the quantity of 0.5 grams to the liter. Certainly no one would deny the advisability of at least restricting the amount to be used of so powerful an agent. In an article of daily consumption, and in consideration of the prevalence of kidney disease at the present day, it is a matter worthy of grave consideration, whether it would not be more prudent to forbid its use altogether. At all events, beer in which it is used should be sold under its proper designation as "salicylated beer." It would certainly be of interest to the physician, who prescribes beer as a tonic to a weak convalescent invalid, to know if he were giving at the same time not inconsiderable doses of a strong therapeutic agent, expressly contra-indicated, perhaps, in the case he has on hand.

The following amounts of salicylic acid were found in various articles of diet by Ch. Girard, director of the Municipal Labaratory, in 1881:

Wine contained in the liter, 1.95, 1.60, 1.48, 1.41, 1.35, 0.81, and in one case even 3.50 grams salicylic acid.

Syrup contained in the liter, 0.5 to 1.50 grams.

Beer contained in the liter, 0 25 to 1.25 grams.

Milk contained in the liter, 0 25 to 1.85 grams.

It will be noticed that in one case of wine mentioned it contained in one liter the full therapeutic dose for twenty-four hours.

In this country but little attention seems to have been given to the use of salicylic acid as a preservative. In the investigation made by the New York State Board mentioned above, no search was made for it, or, in fact, for any other preservative. In the last year the municipal boards of New York and Brooklyn seem to have been taking cognizance of its extensive use, as is shown by a paper read by Dr. Cyrus Edson, of the New York Board of Health, before the New York Society of Medical Jurisprudence and State Medicine, November 12, 1886, (already published in AMERICAN ANALYST, 1887, p. 7.)

Then follows an account of a seizure by Dr. Edison of artificial wine as reported in full in AMERICAN ANALYST, 1886, p. 416, and Dr. Bartley's paper on salicyic acid, published by AMERICAN ANALYST, April 1, 1887.

(*To be continued.*)

DOMESTIC PERFUMES.

AN OPENING FOR A NEW AMERICAN INDUSTRY.

The *Picayune* has repeatedly called attention to the opportunities offered in this city and section for the manufacture of essential oils and other perfumes from the native as well as the cultivated plants and flowers. When it is considered that most of the perfumery used in the United States is imported from abroad, and of that manufactured in the country the concentrated extracts from which it is developed are brought also from foreign countries, the importance of such an industry may be seen. In this connection the *Baltimore Manufacturers' Record* has the following:

"Everywhere in the lowlands, from North Carolina southward, are found the magnolia and its lesser sister, the sweet bay, whose blooms, treated by distillation or by absorption, yield a delicious perfume, and from the ripened seeds of the former a delicate extract can be distilled. The cultivated flowers from which commercial perfumes can be obtained are numerous. Among the best known and most common are the moss and Luxemburg roses, all of the jessamines, lavender, lemon-verbena, bergamot, the rose and staghorn geraniums, tuberose, white lily (*lilium candidum*), lily of the valley, narcissus, English or sweet violet, mignonette, and in Florida and other Gulf States the orange and lemon."

The apparatus for the distillation of these oils and the extraction of essences by steeping the leaves of flowers in oils is not expensive nor are the processes difficult. The oil of sassafras is largely produced in North Carolina by distilling the bark in ordinary stills like those used for making turpentine, only smaller, and a large share of the business is done by negroes. With more delicate odors processes less crude would be desirable, but they involve nothing that is of special difficulty. The business is open to any who will utilize the opportunity.—*N. O. Picayune.*

LENTEN LORE.

EXTENT OF THE EGG TRAFFIC OF NEW YORK CITY.

Very few of those who visit their corner grocery and purchase their modest 15c. and 25c. worth have any idea of the vast quantity of eggs supplied to and by the United States of America. The eggs received in New York alone during 1887 amounted to 534,400 barrels of 70 dozens each, and 745,843 cases of 30 dozens each, or a grand total of 717,388,240 eggs in New York last year! How many of these were fresh? Take a stroll down Washington street, and see the merchants opening their barrels and cases. On the sidewalk and even in the buildings are women who have come to buy cracked eggs. Very few men engage in this business; the women are much shrewder, and with a covered wooden pail in hand they watch the cracked eggs being taken out. They buy them up and re-sell them to the bakers. No bad eggs can be palmed off on these women; the cracked egg must be completely broken and emptied before they accept it on their count. Many small stores also buy cracked eggs, and these are purchased in small quantities by boarding-house keepers who delight in "home-made pastry on the table." But the rotten eggs? What becomes of them? In former years they were taken to the scows and dumped with the city refuse, but now they are the means of supporting a distinct line of business. They are gathered together by the members of an energetic commonwealth, who take them to New Jersey, put them in barrels and sell them to the manufacturers of Morocco leather. So necessary have they become for the leather process that the demand is frequently greater than the supply. In the crowded state of this city it is almost a matter of impossibility for boarding-house keepers to supply their patrons with "fresh eggs" all the year round. Unless persons can keep their own hens fresh eggs must, with them, be at a discount. The hen is a willful bird, subject to all the caprices of her sex, and so long as her nature prompts her to do most of her laying during the milder portion of the year, so long will the necessities of the case require that a portion of her product shall be kept from the period of plenty to relieve the period of scarcity. This question of preserving eggs has excited attention for centuries, and millions of dollars have been lost in trying to attain perfection. The liming process was discovered a little more than a hundred years ago, and an excellent method it is, but such eggs are easily detected, and while a prejudice exists against them they can seldom be foisted as fresh. The later invention of refrigerating consists in holding eggs in proper packages in a cool temperature, so that they will not grow old too fast. The temperature is generally from 38 to 40 degrees, in which they are often kept from three to six months. But these ice-house eggs are usually found to be "risky." They come into the market early in the Fall, just when trade is picking up and prices advancing. They work off rapidly at first, but the regular egg-eater soon discovers there is something wrong, and they are incontinently "dropped." The worst of this kind come from Canada, where they are packed in oat-hulls. It is a notable fact that the Northern bred-and-born egg is heavier and far superior to the Southern, which is usually very sickly. Then, again, the eggs of small guinea-hens and other birds are frequently substituted for the natural food egg. It is the general practice of selling by the dozen which allows of such a state of things, and to obviate this there was introduced in the State Assembly at Albany, April 4, 1877, "An act to establish the weight of a dozen of eggs, and to establish an equivalent in weight to a count by the dozen." It set forth that one pound and eight ounces should be the equivalent of a dozen eggs. The act was defeated in the Senate. Since then the subject has been continually agitated by those most interested in egg produce, but, although it is obvious that the method would be a protection to both buyer and seller, still nothing seems more conservative than trade customs. It has been found that the average weight of small eggs is twenty ounces to the dozen, and that of large eggs thirty ounces to the dozen, which naturally means a great differance in value, in which the consumer appears to be the greatest sufferer. Still, many think that to the consumer a change would cause the most dissatisfaction. Only one man in this country —Mr. Smith Barnes, of Traverse City—has tried selling by weight, and after much opposition he has succeeded in establishing the custom in his own store.

PURE FOOD.

WHERE THE RESPONSIBILITY FOR ADULTERATION RESTS.

At a banquet given recently by the Woolson Spice Co., in Toledo, Ohio, Mr. E. A. Stowe being called upon to respond to a toast to "Pure Food," spoke as follows:

"From my earliest remembrance the purveyor of food products has been the butt and jest of the community. So common, indeed, have become the disparaging statements which are current in the newspaper press and street gossip, that the victim of this habit no longer considers it worth his while to enter a protest. The butcher, for instance, no longer resents the imputation that his sausage receives additional flavor from the admixture of the neighborhood dogs and he exhibits equal fortitude when you assure him that his beefsteak is so tough that you cannot stick in your fork in the gravy. The milkman chuckles to himself when you drop a nickel in the just-filled milk pitcher, and he seems to derive as much satisfaction as you do on the discovery that you can easily detect the date of the coin under six inches of milk. He will agree with you in the statement that he knows more about chalk than cream, and that he is better acquainted with the mechanism of a pump than the care of a cow. The grocer no longer denies that his butter is so strong that it will pull your mother-in-law in off the street, nor will he commit himself on the old chestnuts relative to his sanding his sugar, watering his vinegar and moistening his tobacco. He smiles complacently when you inform him that his pure olive oil, with the genuine Leghorn trade-mark, sustains a near relationship to the cotton fields of Georgia and the peanut farms of Virginia. The baker and confectioner no longer threaten to thrash you when you assert that their business received a strong impetus on the discovery of a mountain of terra alba. The druggist does not take the trouble to explain why it is that the liquor he sells you (for medical purposes only) insists on congealing when the thermometer hovers around zero. While most of the reckless charges thus made against merchants are gross exaggerations, unworthy of serious consideration, it is foolish to deny that there exists some cause for complaint—that impure

* *Jour. Prak. Chem.*, 13, 106. Reference may be made to similar experiments as follows: J. A. Barral, *Jour. de l'Agriculture*, 1882, 69; M. Blass, *Bull. de l'Acad. Royale de Med. de Belgique Bd.* 12, No. 9.

goods are sold to a greater or less extent, varying according to the demands of the community. Such a condition of things being admitted, then the question naturally arises, What are you going to do about it? Are you going to conform to prevailing methods, or do you propose to set yourself up as a reformer and insist upon telling the dear people they are depraved because they do not always select the best the market affords? This is a question which every merchant must settle for himself. In my opinion, the sophistication of food products is the direct result of a demand, on the part of the consumer, for cheaper goods, and so long as people cry for something cheap, so long will sophistication and substitution flourish, and the ingenuity of man be stimulated to devise legitimate and illegitimate methods to meet that requirement. While this is true, I am equally positive that the adulteration of goods does not always imply their deterioration. My advice to the merchant would be: Adapt yourself to circumstances. If Tom Jones wants kettle rendered lard and is willing to pay 10 cents a pound for it, sell it to him. If, on the other hand, John Smith's finances or tastes are different, and he prefers the 8 cent "refined" lard manufactured by Messrs. Armour and Fairbanks from cottonseed oil and lard, accommodate him. If one man wants Mocha coffee at 40 cents a pound, give it to him. If his poor neighbor on the alley prefers a mixture of peas, beans and chicory, with merely enough coffee to give it flavor, sell him the mixture. Remember that it is the business of the merchant to sell goods—not to constitute himself a Board of Health and assume a dictatorship over the people who look to him for their supplies. In my opinion a merchant has a right to handle anything that is called for, *providing the article is not unwholesome and is sold for what it really is.* I see no more harm in selling a mixture of burned crackers and pepper for 20 cents a pound than pure pepper for double that price, providing the purchaser understands, plainly and unmistakably, what he is getting—no more harm, in fact, than in selling a rich man a hat for $5 and a poor man one made on the same form, but of different material, for $2. I consider it the province of the merchant to educate his patrons up to purchasing pure goods, by demonstrating to them that good goods are more satisfactory in every respect and are cheaper in the end; but a man who arrogantly assumes to himself all the wisdom of the community and insists upon all his patrons buying one class of goods, comes under the head of those who are "born before their time." Regarding the so-called pure food movement, inaugurated a year ago, and which is advocated with acrimonious ardor by several trade journals, I have nothing to say, either for or against, except to assure you that it is carried on "for revenue only," and, consequently, open to suspicion. I do not apprehend that the proposed bill—or any one of the numerous proposed bills—will become a law, and I am equally certain that if any law is enacted it will not be enforced. Public sentiment is the lever which moves the world, and no enactment will meet with success where public sentiment is not strong enough to sustain it. As business men we should remember that agitation and education are the handmaids of progress, and that those of us who adopt such methods do not need the assistance of the law to compel us to do that which we can do of our own accord. We have the remedy in our own hands, and so long as the question involves nothing more than a moral point, it seems to me to be the sheerest kind of folly to appeal to Congress—unless we wish to bias legislation in such a way as to render our boasted freedom a delusion and a sham.

POISONOUS CANDY.

SOME SIMPLE TESTS FOR ITS DETECTION.

The question is often asked are there no simple tests, within the reach of everyone, by which dangerous or injurious ingredients in candy may be detected? Yes, there are; and, in a recent interview on the subject, Dr. Edson, who has had years of experience in these matters, pointed them out. "Three kinds of adulteration," he said, "are practiced in the manufacture of candy. We may speak of them as bulk, color and flavor adulteration. The substances used in place of sugar to increase the weight or bulk are terra-alba, kaolin, whiting, starch and ground quartz. Terra-alba (hydrated sulphate of lime), may be detected by burning a few of the suspected candies in an iron or other suitable vessel, until the sugar is consumed, and then mixing in a tumbler of water the ashes that remain. If a white cloudiness ensues after adding a little chloride of barium, a cheap substance that can be purchased at any drug store, then the candy has probably been adulterated with terra-alba. Kaolin and ground quartz may be detected by dissolving the candy in hot water; as the kaolin and quartz are insoluble, they will settle to the bottom. Whiting, ground chalk, will cause the solution to effervesce if a little acid is added to it. The test for starch is an accurate one. Dissolve a sweetmeat in a little cold water and add a drop or two of the tincture of iodine; if a bluish color is developed, starch is present. On this point I might say that candy which has undergone adulteration for bulk, though very injurious, can not, in the strict sense of the word, be called poisonous.

"As regards the adulteration practiced for color, this is frequently a most dangerous fraud, in consequence of the poisonous pigments used. Some of the manufacturers whom I detected practising this form of adulteration, asserted that the amount of color used was so small that it could not possibly be injurious; but this is not true, as is indicated by the eye alone and confirmed by chemical analysis. Preparations of lead, copper, mercury and arsenic are poisons such as are termed by the medical profession cumulative in their effect—that is to say, they accumulate in the system, little by little, until enough is present to act poisonously. Cases are on record of lead poisoning caused by merely moistening with the tongue wafers colored with red lead. How much more injurious is confectionery colored in like manner when taken through the stomach? To test candy with respect to poisonous colors one needs a few ounces of alcohol, about an ounce of bleaching powder in solution (hypochlorite of calcium), a little white woolen yarn, and a small bottle of aqua ammonia. See first whether the color can be dissolved out by alcohol; if it can, immerse the woolen yarn in the solution, and should the color adhere to the yarn and dye it, the probabilities are that it is a coal-tar color; if a red, it may contain arsenic. If the alcohol produces no effect, apply a drop of the bleaching powder solution to the surface of the sweetmeat; if the color fades out it is probably of vegetable origin and harmless.

"The poisonous color most frequently used is chrome yellow, a compound of chromium and lead. Its presence may be strongly suspected if the following tests have shown that none of the harmless yellows have been employed. The harmless yellows most commonly employed are turmeric, a vegetable color made from the root of a certain herb, fluorescein, a coal-tar yellow, and a number of vegetable yellows. Turmeric turns red when treated with ammonia. The other vegetable yellows fade when treated with the solution of bleaching powder. To detect fluorescein dissolve the candy in a tumbler of water and view the water in the sunlight against a black background. If fluorescein has been used, the green fluorescein will then be seen. When the tumbler is held between the eye and the light the color of the water appears yellow. If no results are obtained by any of these tests the suspected candy is probably colored by chrome yellow and is poisonous. Burnt umber, an iron-bearing earth frequently used to adulterate chocolate confections, may be detected in this way: Dissolve the confection in a glass of hot water; if a brown gritty residue remains undissolved on the bottom the presence of the umber is indicated."

He could not give, he said, any simple test by which the third class of adulterations might be detected. The flavoring essences, wintergreen, vanilla, and other flavors used are nearly all artificially made. Some of these contain prussic acid and some fusel oil, both of which are, as everyone knows, highly poisonous. The essence of pineapple, made by distilling rancid butter, wood alcohol and oil of vitrol, is also considered injurious by good authorities. Almond flavor is said to have caused cases of fatal poisoning from the prussic acid contained in it. "However," said the doctor, in conclusion, I can assure you that there is no candy made or sold by any first-class dealers in this city that one need fear to eat. The knowledge of certain detection and conviction will, if nothing else avails, prevent infractions of the law."

OCEAN WAVES.

SOME CONSIDERATIONS RESPECTING THEIR HEIGHT IN STORMS.

It is a very common phrase to speak of the waves during a storm as "running mountains high," but this really means nothing. Accurate measurements made by Scoresby proved that, during storms, waves in the Atlantic rarely exceed forty-three feet from hollow to crest, the distance between the crests being 560 feet, and their speed thirty-two and one-half miles an hour. More recent observations in the Atlantic give from forty-four to forty-eight feet as the highest measured waves; but such heights are rarely reached, and, indeed, waves exceeding thirty feet are seldom encountered. The monsoon waves at Kurrachee breakwater works were found to dash over the wall to the depth of eighteen feet, or about forty feet above mean sea level. The greatest heights of waves on the British coast were those observed on Wick Bay—so famous for the exceptionally heavy seas which roll into it—being thirty-seven and a half to forty feet. Green seas to the depth of twenty-five feet poured over the parapet of the breakwater at intervals of from seven to ten minutes, each wave, it was estimated, being a mass of 40,000 tons of water, and this continuously for three days and nights. The iron-pile lighthouse erected on the Bishop Rock was carried away by unbroken seas striking the dwelling, the floor of which was eighty-five feet above high water. A tower of granite was subsequently erected on the Bishop, and in 1860 the waves carried away the fog bell, weighing 300 pounds, at an elevation of 100 feet above the sea. In the Shetland Islands blocks of stone have been quarried at the height of seventy to seventy-five feet above the mean sea level. But these instances of the action of the waves during storms sink into insignificance when it is mentioned that blocks of concrete weighing 1,350 to 2,600 pounds respectively were carried away by the repeated assaults of the wild rollers of Wick Bay. The depth to which wave action extends has been differently estimated, but it varies from seventy to one hundred and fifty feet, as shell fish which are known only to live at these depths are thrown upon the shore during heavy gales, and it has been ascertained that shingle is moved in a depth of fifty feet. For all practical purposes, however, so far as harbor works are concerned, it is found that there is little movement of materials under eighteen to twenty feet below water, the foundations of breakwaters hitherto constructed not having been disturbed below these levels.

PREHISTORIC SKATING.—As is well known, the art of skating is a prehistoric one. In many parts of Europe bones of domesticated animals have been found which had been used as skates or as runners of small sledges. It is of considerable interest to learn that similar implements are found still in use in several parts of Northern Germany. In the *Journal of the Berlin Ethnological Society* sledges are described which consist of a board resting on the bones of a horse. But, besides this, skates are used the runners of which consist of the lower jaw of cattle, the curvature of the lower side serving admirably the object of the skate.

DOMESTIC DIETETICS.

SEASONABLE FOOD.

March.

MEATS. — Beef, lamb, mutton, veal, venison, ham, kidneys, liver, sausage.

GAME AND POULTRY.—Grouse, hare, pigeon, chicken, duck, goose, turkey, snipe.

FISH. — Anchovy, bass, carp, catfish, eel, flounder, halibut, herring, lobster, mackerel, oysters, rock bass, rock fish, salmon, smelt, whitefish, shrimp, trout.

VEGETABLES. — Artichokes, carrots, celery, onions, parsley, parsnips, potatoes, turnips, lettuce.

FRUITS.—Apples, oranges, bananas.

PRACTICAL RECIPES.

CURRY SOUP.—Cut the meat from an ox-cheek and soak it well, then put it in a stewpan, with four onions cut in slices and a bunch of potherbs; add three quarts of water; remove the scum frequently, and strain; add also half a pound of soaked rice, one teaspoonful of curry powder, a little pepper and salt, and stew four hours.

TO FRY SHAD.—Clean the fish, cut off the head, and split it down the back; save the roe and eggs when taking out the entrails. Cut the fish in pieces about three inches wide, rinse each in cold water and dry on a cloth; use wheat flower to rub each piece. Have ready hot salted lard and lay in the fish, inside down, and fry till of a fine brown, then turn and fry the other side. Fry the roe and egg with the fish.

CORN BREAD.—Take one and one-half pints of corn meal, one-half pint of flour, one teaspoonful of salt, three eggs, one cupful of cerealine flakes, one tablespoonful of sugar, two teaspoonfuls baking powder, two tablespoonfuls of lard, one and one-fourth pints of milk. Sift together the corn meal, flour, sugar, salt and baking powder. Rub in the lard cold. Add the eggs well beaten, then the milk and cerealine flakes. Mix into a moderately stiff batter. Pour from the bowl into a shallow cake pan, and bake in a rather hot oven.

CODFISH PIE.—Take a piece from the middle of a good-sized fish, salt it well all night, then wash it and season with salt, pepper and a few grains of nutmeg, a little chopped parsley and some oysters; put all in your dish, with pieces of butter on the fish; add a cup of good second white stock and cream; cover it with a good crust, adding a little lemon juice in the gravy.

FRIED POTATOES.—Remove the peel from an uncooked potato. After it has been thoroughly washed, cut the potato into thin slices and lay them in a pan with some fresh butter; fry gently a clear brown, then lay them one upon the other in a small dish, and send to table as an *entremets*.

PUFF CAKE.—Take two and one-half cups white sugar, three eggs, one-half cup butter, three cups flour, one cup milk, and one and one-half teaspoonfuls Horsford's baking powder; flavor to your taste. This quantity is sufficient for two small pans.

OYSTER MACARONI.—Boil macaroni in a cloth to keep it straight. Put a layer in a dish, seasoned with pepper, salt and butter, then a layer of oyster until the dish is full. Mix some grated bread with a beaten egg, spread over the top and bake.

DROP CAKE.—Take one-half pint of cerealine flakes, one cup of butter, four eggs, one cupful of currants, washed and picked, and one-half cupful of milk, one pint of flour, three-fourths cupful of milk, one teaspoonful of Horsford's baking powder, one teaspoonful each of extracts of orange and cinnamon. Rub the butter and sugar to a light cream. Add the eggs and beat for ten minutes. Add the flour and baking powder sifted together. Add the milk, cerealine flakes, currants and extracts. Mix the whole into a rather firm batter, and drop with a spoon on a greased baking tin. Bake on a hot oven for about ten minutes.

GINGERBREAD LOAF.—Butter and sugar, one teacupful of each; half a teacup of cold water, one tablespoonful of ground ginger; soda dissolved in water, Burnett's extract of cinnamon, one teaspoonful of each; flour to make a stiff batter. Melt the butter, slightly warm the sugar and spice, and beat together for ten minutes; then add the water, soda and flour. Stir well, make into three small loaves, and bake in a moderate oven.

ORANGE MARMALADE.—Take nine Seville oranges (sweet) and four lemons, slice straight through pulp and all very thin. Put into a jar with four quarts of water (cold); let it stand thirty-six hours, boil for two hours, then add two pounds white sugar; boil one hour or until it jellies.

EGG SALAD.—Put the crisp leaves of a head of lettuce in a salad bowl, and add four sliced hard-boiled eggs. Sprinkle a dozen minced capers over the whole and add a plain dressing made of one saltspoon salt, one-fourth saltspoon pepper, one tablespoon oil. Mix and add to salad, toss the lettuce lightly and add one tablespoon of vinegar; serve.

MEDICATED SOAPS.

THEIR VARIETY AND SPECIAL VALUES.

Prof. Shoemaker says that soda soaps are more irritating than potash soaps. Soaps that contain free alkali are, in young children, the cause of many skin eruptions, such as simple erythema, seborrhœa, pustular eczema, and the like. Alum soap is good in hyperidroses, in pustular eczema, and in chafing. Boroglycerine soap is useful in acne, seborrhœa, and rough skin. Chamomile soap is mildly stimulating, excellent for bromidroses, intertrigo, and is the best soap for dandruff. Naphthal soap is the best application for animal parasites on any part of the body, and also in bromidroses. Salicylic acid soap is a non-irritating antiseptic soap, and is good for toilet purposes. Corrosive sublimate soap is serviceable for removing freckles, chloasma, rough skin, for changing a muddy to a clear complexion, and in all kinds of itching.—*Philadelphia Medical Times.*

ADULTERATED PAINTS.

RESULTS OF THE ANALYSES OF SOME ENGLISH PIGMENTS.

That adulteration is not confined to eatables and drinkables must be evident to every observer, and that America is not the only country where adulteration flourishes is equally apparent from the following communication, taken from the *Oil and Colorman's Journal* of London:

"The following results of analyses of some pigments in everyday use may be of interest. In many cases the admixture given should not be understood to mean adulteration—*i. e.*, a buyer well knows that pure chrome yellow cannot be obtained at 35s. per cwt., and again, it is almost impossible to obtain a bright red oxide paint unless it be mixed with a considerable quantity of chalk or barytes; so much cannot be said of a Brunswick green 'consisting only of chromate of lead, Prussian blue and white lead,' which was proved to consist of chalk colored with an analin green. There is one question of very great importance affecting the oil and color trade, viz.: the question of 'commercial purity.' I have frequently found 2 per cent. of sulphate of barium in white lead, and have called such a sample adulterated (to my mind, it is a very bad example of adulteration); in linseed oil I have found 5 to 7 per cent. of rape or nut oil, and have known such cases pass on arbitration on the ground that they were 'commercially pure.' Now 5 per cent. of rape oil is quite sufficient to render linseed oil quite useless for many purposes, and there is nothing in the manufacture of white lead which could produce 2 per cent of sulphate of barium. In the year ending August 31st I have examined 185 samples of white lead; of these 93 were pure, 17 contained from 65 to 72 per cent. of sulphate of barium, 23 contained from 40 to 53 per cent of adulteration, 27 contained from 18 to 35 per cent. adulteration, 16 contained from 8 to 15 per cent. of adulteration, and 9 contained from 2 to 5 per cent. of adulteration; out of 74 samples of chromate of lead only 17 were found pure; all others contained from 35 to 45 per cent. of chalk; 8 samples of cinnabar examined gave 5 pure; the other three contained from 4 to 9 per cent. of mineral matter. Five samples of lampblack contained under 15 per cent of mineral ash, 3 others contained from 5 to 9 per cent. of ash; 19 samples of Brunswick green, said to contain 20 per cent. of coloring matter, contained from 11 to 3 per cent. less; 3 samples of red lead were deficient in oxygen, and 2 contained 7 per cent. of sulphate of barium; 54 samples of various colors used for paper staining, tested for arsenic, gave no trace of this dangerous compound, which must be regarded as highly satisfactory."

CANDIED FRUITS.

IMPROVING UPON NATURE.

Until quite recently all of the candied fruits that were seen at the Broadway fruit stores and confectioners' were imported from France. Now most of them come from California. The French fruit is put up in a more showy manner, and brings a higher price than the domestic fruit. But the California product is just as good eating, and with a little practice will equal the imported fruit in appearance. The method of preparing the fruit is simple, but it requires good judgment to be successful. In the South of France it has grown to be a great industry, as nearly all of Europe is supplied from that section. In preparing the fruit, pears, pineapples and quinces are pared; citrons are quartered, and the pits of cherries, apricots and peaches are removed. The fruit is then immersed in boiling water, which quickly penetrates the pulp, dissolves and eliminates the juice. Then the fruit is removed and the water drained off, leaving only the solid portions of pulp intact. This is then immersed in large earthen pans, in a syrup made by dissolving sugar in water. The syrup in turn penetrates the pulp, and gradually replaces the fruit juices. In about six weeks it is thoroughly impregnated with sugar, and is taken out and washed with pure water. If it is to be glazed, it is dipped into a thick syrup and left to harden in the open air. This produces a transparent coating. If the fruit is to be crystalized, it is dipped in the syrup and then dried slowly in a kiln heated to ninety degrees. This produces a granulated appearance. If properly done, candied fruits will bear transportation to any climate, and will preserve their quality and flavor for a year. The imported fruits are put up in neat bon-bon boxes with glass fronts. The California fruit is assorted and placed in fancy paper boxes, holding one or two pounds each.—*Mail and Express.*

ELECTRICITY.

ITS USE AND ABUSE IN MEDICAL PRACTICE.

The importance of electrical therapeutics is meeting now, after long delay, with proper recognition from our medical colleges. No student is graduated to-day without some knowledge of this branch of medicine, though few acquire it to the degree of proficiency. This is, perhaps, more the fault of the student than the instructor. Electro-therapeutics seem so simple, when considered superficially (which is the way they are considered by most medical tyros), that very little time is given to the study of the subject. Many fancy that there is nothing to be done but start the current and apply the electrodes, that electricity can't do any harm

if it don't do any good, and that its systematic application is mere ceremony. It is this lack of knowledge that begets lack of faith both in the patient and operator. The careless use of the battery, the ignorant application of galvanic and faradaic currents *ad libitum*, not only fails signally, but may produce genuinely deleterious effects. It is a great misfortune that the advertising of electricity as a cure-all has thrown discredit on electro-therapeutics, which have been branded, therefore, to some extent as a kind of quackery. This is even more so with magnetism. Very often we find people opposed to the use of electricity. They have tried it, they say, and it has done them no good. Investigation generally shows that such patients have worn some of the so-called electrical apparatus or clothing, have used electric hair brushes, or worn "Voltaic medals," which, of course, have nothing to do with electricity, and are not of much use as a liver pad. Occasionally we come across some who have really tried a battery, but it has, perhaps, been the wrong current, applied too strong or too weak, and generally in the wrong place altogether. It is a great pity that it is possible for people to trifle with such a valuable therapeutic agent as electricity, which is often brought by pure ignorance into undeserved disrepute. But it is not only the unprofessional experimenters who err in this way. Many older or less progressive practitioners, who hear the merits of electricity noised abroad, invoke its agency without understanding properly the mode or theory of its application. They had not, as students, any opportunity of studying electro-therapeutics, then in its infancy; and latterly, as physicians, they have not appreciated the importance of the subject sufficiently to give it due attention. It is in this way that the usefulness of a great remedial agent is hindered and perverted.—*Med. Register.*

SOME DON'TS.

A FEW PRACTICAL HINTS, CONCISELY STATED.

Don't infer because a certain remedy cured a case similar to yours, that it will positively cure you.

Don't use alleged "disinfectants" that simply smell stronger than the odors you desire to abate.

Don't drink whiskey in cold weather; alcohol lowers the body temperature.

Don't purchase vegetables or fruit even ever so slightly "specked." The removal of the spoiled parts does not remedy the decomposition that has begun in the entire fruit or vegetable.

Don't neglect to have your dentist examine your teeth at least once every three months.

Don't continue at your business or work when your appetite fails, when your temper grows peevish or irritable, when your sleep is disturbed, when your heart palpitates strongly and your pulse grows intermittent. Under these circumstances, consult your physician, and if he gives you drugs and allows you to continue your work, throw him to the dogs with his physic.

Don't employ any other means than the following, while awaiting your physician, sent for to attend a case of obstinate nose-bleed: Sit erect, fingers locked over the head, cloths wrung out of ice-water applied to the forehead and two fingers upon the lips; the tips of the fingers pointing to the nostrils and pressing the lip firmly against the bone beneath it. If the flow of blood is severe, ice-water may be frequently injected into the nostrils.

Don't neglect a "common cold;" it may lead to even fatal pneumonia. At bed-time take a hot mustard foot-bath, followed by a hot lemonede, six grains of quinine or ten grains of Dover's powder, and cover yourself thoroughly. If you are not perfectly well in the morning, remain abed and send for your physician. If not within reach of a physician take epsom or rochelle salts, or citrate of magnesia, until free effect is produced. Drink copiously of flax-seed or slippery elm tea, and take a quarter or a half teaspoonful of syrup of ipecac every two or three hours, with a grain or two of quinine, paint the upper part of the chest with strong tincture of iodine, or rub it thoroughly with oil of turpentine.

Don't think that any prowess is manifested or benefit derived from the use of electrical batteries in the manner you are invited to, at public fairs and pleasure resorts. —From "600 Medical Don'ts."

INDIA-RUBBER.

HOW OBTAINED AND WHAT COMPOSED OF.

Few industries have made such rapid strides of progress during the last quarter of a century as that connected with the application of india-rubber and gutta percha, and it is surprising, considering the important practical uses to which they are placed, that so little is known as to their composition, and chemical and physical properties. The high degree of elasticity they possess, combined with their impermeability to water, render them particularly valuable for many purposes. For insulating the wires of the electric telegraph an envelope of gutta-percha or india-rubber is pre-eminently suited, preventing the electric force from being conducted away by the ground or other object; and this envelope is equally effective whether the wires be fixed in the atmosphere, in the ground, or under the sea. Where steam power is used the superiority of mill bands and driving straps containing rubber is indisputable, and for many domestic and manufacturing purposes its advantages are well known. India-rubber appears to have been first mentioned about five hundred years ago by Henara, who observed that the inhabitants of Hayti played a game with balls "made from the gum of a tree." It was not, however, until the eighteenth century that the industry of india-rubber really commenced. There are several varieties of rubber imported, the most noted being the Para, Ceara and Madagascar. Some of the finest rubber is obtained from the tree *Hevea Brasiliensis*, which attains a height of upwards of sixty feet, and a diameter of about three feet. The rubber is found in the milky juice of the trees, from which it is extracted by making horizontal incisions in the bark near to the base. The small vessels containing the juice are centered mainly in the middle of the bark, and disseminated through it is rubber in the form of minute transparent globules sometimes having a diameter so small as $\frac{1}{20000}$ to $\frac{1}{50000}$ of an inch. The rubber seems to be maintained in solution by the presence of ammonia, of which the fleshy tapped juice emits a strong odor, which, however, it soon loses. When the juice is required to be kept for any length of time the addition of a little ammonia will prevent its coagulation. India-rubber, or caoutchouc, when in its pure state, has a specific gravity of about 0.915, is almost white in color and odorless. It will absorb water, the amount depending upon the length of time it is in contact with it, and being from 10 to 25 per cent. of its weight. The majority of fatty substances exert a destructive action upon rubber, making it at first soft and pliable and afterwards brittle. It thus happens that the presence of a trace of oil in the fabrics from which waterproof garments, elastic webbing, etc., have been made, frequently bring about their deterioration or destruction. This point should be borne in mind in connection with the rubber rings that are used for mineral water bottles. The india-rubber industry is the principal resource of the two great provinces of the Amazon Valley, Para and Amazon, and its product occupies the third place in the list of national exports. The rubber tree requires a growth of from twenty to twenty-five years before it begins to produce, and for this reason little or nothing has been done for its propagation. The milky sap, which forms the rubber, is taken from the wild tree, which is to be found throughout the forests of the Amazon and many of its affluents. The industry being chiefly in the hands of an uneducated and half-civilized nomadic population of Indian mixture, is of a crude character, and is pursued chiefly on the national domain. Nothing has been done of late years to improve the system of labor, and a wasteful and exhaustive process has been followed for half a century, with the result that millions of rubber trees have been destroyed, and many others abandoned from premature and excessive use. There are instances of groves of trees which by careful use, and by not permitting them to be tapped in the months of August and September, in which they change their leaves, have been yielding for thirty years, and are still in good producing condition. The tree thrives only on a soil which has been annually submerged to a depth of three or four feet, and prefers the lowest and most recent river deposit. The rubber gatherers are temporary squatters, and their usual dwelling is a hut with a low roof of palms, beneath one end of which there is a raised floor, or framework of lath, one or two yards from the ground, to which the occupants retreat in high water. The following is the system employed in collecting the rubber: Narrow paths lead from the gatherers' huts, through dense underwood, to each separate tree, and when the dry season sets in small holes are cut with a hatchet in the bark of the trees. The milk-white cap immediately begins to exude into pieces of bamboo, tied below, into little clay cups set under the gashes to prevent its trickling down the stem. The gatherer goes from tree to tree, and on his return visit he pours the contents of the bamboos into a large earthenware vessel provided with straps, which he empties at home into a large turtle shell. He then commences to coagulate it with the smoke of palm nuts, and pours a little of the milk evenly upon a light wooden shovel which he thrusts into the thick smoke issuing from a little narrow chimney, made from the neck of an earthen bottle. He moves the shovel to and fro several times with great rapidity, when the milk is seen to consolidate and take a grayish-yellow tinge. He then puts layer on layer until at last the rubber on both sides has reached a thickness of two or three centimeters; it is then cut on one side, taken off the shovel, and hung in the sun to dry. A good workman can prepare five or six pounds of rubber in an hour. From its initial color of clear silver gray it turns to a yellow, and finally becomes the well-known dark brown of the rubber such as it is exported. The more uniform, the denser and freer from bubbles, the whole mass is found to be, the higher the price it realizes. Almost double the value is obtained for the first-rate article over that of the inferior quality, which is nothing but the drops collected at the foot of the trees. India-rubber may be dissolved in chloroform by introducing thin slices into it and agitating the mixture; the solution painted over a wound or cut forms an admirable plaster, the chloroform evaporating and leaving the rubber behind in the form of a thin pellicle or skin, which draws the edges of the wound together and effectively excludes the atmosphere. Turpentine oil and coal benzine are the best media for dissolving rubber. Dilate acids and alkalies have but little or no action on rubber, but concentrated sulphuric acid gradually attacks it, and, if hot, chars it. Strong nitric acid quickly oxidizes and destroys it, as do also chlorine, bromine and iodine where in excess; their limited action, however, is to vulcanize it, which will be considered further on.

In chemical composition india-rubber is a hydrocarbon, its ultimate analysis showing—

Carbon	87.5
Hydrogen	12.5
	100.0

The juice from the trees yields about 32 per cent. of rubber, and has approximately the following composition:

Caoutchouc	32
Albuminous and saline matters	12
Water	56
	100

VERY OLD AGE.—The death is reported from Constantinople of a man named Dimitrios Antippa at the extraordinary age of one hundred and fifteen years. The deceased was born at Cephalonia in 1772; and, though in his later years he settled down as a merchant in the Turkish capital, he had passed his earlier days in Paris during the Reign of Terror, having had among his personal friends Marat, Danton and Robespierre. To the last, M. Antippa retained his clearness of intellect.

INTERNAL USE OF GLYCERINE.—Dr. Tisne asserts that glycerine taken internally exerts a beneficial effect upon nutrition, increasing the weight, and palliating many of the distressing symptoms of phthisis, such as loss of appetite, diarrhœa, night sweats, and insomnia. Its action on the liver is manifested by an increase in the size of the organ, and a more abundant flow of bile. It has a diuretic effect, and increases the excretion of urea, the chlorides, and phosphates.

ELECTRIC LIGHT FOR FARMERS.—*The Electrician* states that in Southern Russia the Stepanoff primary battery is to some extent employed by the farmers during the threshing season. The only chance the Russian wheat-grower has to dispose of his crop on favorable terms is, to get it on the market at the earliest possible moment, before the American and Indian freights arrive. Threshing, therefore, is often carried on night and day.

CELLULOID.—Among the various uses of celluloid, it would appear to be a suitable sheathing for ships, in place of copper. A French company now undertakes to supply the substance for this at nine francs per surface meter, and per millimeter of thickness. In experiments by M. Butaine, plates of celluloid applied to various vessels in January last were removed five or six months after, and found quite intact and free from marine vegetation, which was abundant on parts uncovered. The color of the substance is indestructible; the thickness may be reduced to 0.0003 metre; and the qualities of elasticity, solidity, impermeability, resistance to chemical action, etc., are all in favor of this use of celluloid.

A SIBERIAN PACIFIC RAILROAD.—The great scheme for a through Siberian railway from St. Petersburg to Valdivostock, the naval port on the Pacific, is making progress.

FLOATING GARDENS.—The floating gardens of the rivers of Cashmere are formed by the long sedges being interwoven into a mat, earth being superimposed thereupon, and the stalks finally cut under water, thus releasing them from the bottom of the lake; they are usually about twenty by twelve yards in size. A dishonest Cashmere will sometimes tow his neighbor's garden away from its moorings, and appropriate his produce, which generally includes cucurbitaceous fruits and vegetables, and a fine description of grape.

CURING HYDROPHOBIA.—Hogyes, of Buda-Pesth, has published in the *Orvosi Hetilap* an account of some researches he has made on the protection of dogs from rabies by a somewhat simpler method than that employed by Pasteur. He, too, makes use of the spinal cord of an infected rabbit, but instead of drying it to a gradually increasing extent to obtain various degrees of activity he merely rubs it up with water containing chloride of sodium so as to make solutions varying in strength from one-tenth to one-five-thousandth. The dog to be protected is injected successively with these, beginning with the weakest. The results appeared to be quite satisfactory, and a complete immunity from rabies was secured by six of those injections.—*Lancet.*

SEVENTY YEARS AGO.—A magazine published in Philadelphia in 1818 gave the following as an item of news: "In the course of the twelve months of 1817, 12,000 wagons passed the Alleghany mountains from Philadelphia and Baltimore, each with from four to six horses, carrying from thirty-five to forty hundredweight. The cost of carriage was about $7 per hundredweight, in some cases as high as $10, to Philadelphia. The aggregate sum paid for the conveyance of goods exceeded $1,500,000." To move a ton of freight between Pittsburg and Philadelphia, therefore, cost not less than $140, and took probably two weeks' time. In 1886 the average amount received by the Pennsylvania Railroad for the carriage of freight was three-quarters of a cent per ton per mile. The distance from Philadelphia to Pittsburg is 385 miles, so that the ton which cost $140 in 1817 was carried in 1886 for $2.87. At the former time the workingman in Philadelphia had to pay $14 for moving a barrel of flour from Pittsburg, against twenty-eight cents now. The Pittsburg consumer paid $7 freight upon every 100 pounds of dry goods brought from Philadelphia, which 100 pounds is now hauled in two days at a cost of fourteen cents.

CHEAP IRRIGATION.—An exchange commends a system of "cheap irrigation for the family garden," which has been tested for years with increasing satisfaction: "Take emptied fruit-cans, place the open end on a hot stove a short time to remove the top, punch about four small holes in the edge of the bottom, set them half their depth in the ground, and plant your seeds around them. Fill with water or liquid manure as often as need be. Cucumbers and the like will take a quart can full every day it does not rain. No baking of surface, no weed-seed, and speed in watering, are some of the advantages."

THE PURSLANE WORM.—Farmers and gardeners frequently have occasion to rejoice in the increase of a certain class of insects, called parasites, that prey upon and destroy other insects which feed upon the vegetable kingdom; but they very rarely have reason to welcome vegetable-eating insects. According to Professor Snow, of Kansas, however, that State and others adjoining are invaded by a caterpillar that feeds upon the purslane weed. There are few gardeners who have not had severe struggles to suppress purslane. During the past season the purslane worm has invaded Kansas in large numbers, exciting a good deal of fear in those who are in the habit of regarding all worms as enemies of the tillers of the soil.

A GREAT PLACE FOR CELERY.—It is in and around the fair and far-famed city of Kalamazoo, says the *Chicago Herald*, that the celery lord, with all his innate pride and odor of garlic, may best be found. Here his coat-of-arms, consisting of a celery penchant on a silver dollar guardant, may be seen emblazoned on his armorial bearings, and also on the faces of the shopkeepers. Here it is that over three thousand acres of "reclaimed" land is devoted to the cultivation of the crisp and toothsome stalk that is gifted with nerve-strengthening properties. In spite of the fact that Kalamazoo leads the country in light vehicles, windmills, harrows, and many other branches of manufacture, she still pins her faith and hope and trust to the celery lands and the celery lords.

ALCOHOL IN WINE.—It may be laid down as a rule that wine containing more than 13 per cent. of alcohol is fortified, especially if, as in sherries, the alcohol is from 15 to 20 per cent., and in the case of port is from 17 to 21 per cent. The average amount of alcohol in the French red wines is 10.44 per cent., and in white, such as champagnes, about 11 per cent.; in hocks and Moselles, about 10 per cent.; in Spanish wines, about 17 per cent.; in ports, 17 or 18 per cent.; in Madeira, 16 or 16.1 or 16.2 per cent.

EVERYBODY REJOICING.—The London *Globe* says, "It is comforting to find that the boiling point of 'allylenedichlordibromida' is 190°, while that of 'methylchlordibrompropylcarbiylchloride' is something between 140° and 145°."

DRILLING GAS WELLS.—The cost of drilling a gas well is usually from $3,500 to $6,000. The method pursued is the same as for an oil well. The weight of the drills, with the attached "jars," is about 3,000 to 4,000 pounds. These rise and fall about four or five feet, and are constantly rotated, so as to bring the bit into contact with the entire circumference of the drilling. For a depth of 500 feet the hole is bored 8 inches in diameter and is cased with 5⅝ piping. Beyond this depth the hole is continued with a diameter of 6 inches until gas is reached or the well abandoned. A casting of 4-inch piping is used for this lower portion. Under ordinary circumstances about fifty days are required for the drilling.

QUAIL DIET.—A physician says it is not at all difficult to eat quail for a number of days in succession. He says that game of any kind may be eaten as a steady diet just as well as may beef or pork. He cites the fact that sailors eat salt pork—a pound a day for a thousand days—and what, he adds, is worse than sailors' pork? During his active connection with the army in the West, many years ago, he ate prairie chicken every day for months, and was glad to get it.

BUSINESS NOTES.

FIDELITY AND CASUALTY COMPANY.

This solid and admirably managed company stands at the very head of its class and is perfectly reliable, and its business is constantly increasing. On the 1st of January, 1888, its assets reached $642,221.32, and its capital $252,000, all of which is securely and profitably invested. A special feature of the business of the company is the bond of suretyship given by it to secure against loss by the unfaithfulness of employees or persons occupying an official capacity. Persons of limited acquaintance, but perfectly honest, frequently find great trouble in obtaining personal security for places of trust, and the company here supplies a felt want that is every year being manifested in business and financial circles. The company steps in as a bondsman in such cases as we have set forth, where the character of the insured is to his credit, and his intelligence is of a character to meet the requirements of the position he is about to occupy. This guarantee is accepted by the courts of the State of New York and several other States, and the system has been pronounced a most admirable one. The Fidelity and Casualty Company, in addition to the feature already named, issues accident policies, insures plate glass against breakage, and insures steam boilers, and in each of these respective departments it has a growing clientage and enjoys the confidence of the business public. For the protection of policy holders, $200,000 in government bonds are deposited with the insurance department of this State. The principal offices of the company are located at 214 and 216 Broadway, in the Park Bank Building. The efficient and able officers of the company are Mr. Wm. M. Richards, president; Mr. George F. Seward, vice-president; Mr. John M. Crane, secretary, and Mr. Robert J. Hillas, assistant secretary. The Board of Directors is composed of many of our most prominent merchants, bankers and business men, who are intimately identified with the growth and prosperity of the metropolis, as well as the entire country.

AN EXTENSIVE DEALER IN FOREIGN AND DOMESTIC FRUITS, NUTS, ETC.

A representative dealer in foreign and domestic fruits and nuts is Mr. E. B. Renaud, successor to George H. Renaud. The business was established in 1851 and has been most successful, and the concern is a favorite with discriminating buyers. Included in his stock are oranges, lemons, nuts, raisins, figs, currants, etc., etc., and Almeria grapes. Of the last-named article he makes a specialty, handling the best grades, and supplies some of the largest fancy grocery houses in this as well as other cities. In fancy Jamaica oranges he deals largely, and holds a fine trade in this special line of fruit alone.

Mr. Renaud is an extensive receiver of Florida oranges from the chief and best sources of supply, and he makes a specialty of this fine fruit during each appropriate season. The house keep only the best fruits, nuts and sardines, and by a long course of honorable dealing has built up a large and constantly increasing demand, both in the metropolis and throughout the entire country. They supply grocers, fruit dealers and bakers, as well as large buyers of every description, including hotels, restaurants, public institutions, etc. Mr. Renaud enjoys in a marked degree the confidence of mercantile and financial men, and all the articles in which he deals are free from adulteration, and are wholesome commodities that are desirable and suitable to the needs of fastidious consumers. The store is most centrally located at No. 99 Barclay Street, convenient to all the leading routes of travel and transportation.

A REPRESENTATIVE IMPORTER AND DEALER IN FRENCH GELATINE.

This article is extensively used by the wholesale manufacturing confectioners' trade, the leading hotels, restaurants, clubs and private families, and is a valuable article of commerce. A representative importer and dealer in the best qualities of French gelatine is Mr. H. Martin, of No. 24 Stone Street, New York, who has unexcelled facilities for obtaining his merchandise from the principal sources of supply in Europe. Gelatine is also used by manufacturers of ice cream and water ices for refining and smoothing their product. The gelatine imported is of the highest strength, is very sweet to the taste, and is of uniform quality and consistence. He also has the celebrated gelatine in two-ounce packages, white and red. These goods sell to a liberal extent, and are constantly increasing in demand with large and appreciative buyers, both in the metropolis and elsewhere. Mr. Martin is a most courteous and indefatigable gentleman, who has by honorable dealing and conservative methods built up a most successful and paying business. He stands deservedly high in mercantile and financial circles, both at home and abroad.

ANALYSES OF BREWINGS OF BEADLESTON & WOERZ, NEW YORK.

	Imperial Beer.	Culmbacher.	Stock Ale.	Porter.	Lager.
Carbonic acid gas	0.15	0.19	0.156	0.232	0.180
Specific gravity at 60° Fah	1.028	1.031	1.023	1.018	0.1016
	Per Cent.	Per Cent.	Per Cent.	Per Cent.	Per Cent.
Alcohol, by weight, in 100 parts	5.06	4.25	9.390	5.940	4.690
*Dextrine and dextrose, in 100 parts	4.90	4.76	3.407	2.739	2.767
*Maltose sugar, in 100 parts	1.15	1.20	2.106	1.917	1.550
Gum, hop bitter, essential oils, etc. (by difference)	0.35	0.33	0.105	0.219	0.120
Albuminoids (protein)	0.73	0.81	0.680	0.731	0.813
Glycerine	0.17	0.13	0.016	0.019	Traces Only.
Salicylic acid	None.	None.	None.	None.	None.
Sulphurous acid	"	"	"	"	Small Trace.
Deleterious bodies	"	"	"	"	None.
Water	87.64	88.52	84.386	88.435	90.060
	100.00	100.00	100.00	100.00	100.00
Total malt extract, by evaporating 100 parts	7.300	7.230	6.224	5.625	5.250
Total ash obtained by calcining the malt extract	0.320	0.440	0.374	0.275	0.225
Total phosphoric acid contained in the ash	0.095	0.130	0.107	0.081	0.069
Total acidity contained in the beers	0.140	0.110	0.201	0.109	0.173

*Marked thus are carbo-hydrates.

FRANCIS WYATT, Ph.D.

I find, upon examination, that these beers are free from injurious substances, especially sulphurous and salicylic acids, as stated by Dr. Wyatt.

SYRACUSE, *February* 29, 1888. F. E. ENGLEHARDT, Ph.D.

I fully concur in the above reports. H. LASSING, M.D.,
Editor American Analyst.

EXPLANATION.

Well made, unadulterated malt liquors are recognized by all scientists as highly nutritious and wholesome beverages, which form heat and are readily assimilable. They should be composed of albuminoids, which are the compounds containing nitrogens, which are the muscle and nerve formers. Also of carbo-hydrates, which furnish the heat, and minerals to build up and repair the frame-work and bones. As in an average adult human being, weighing say 150 lbs., these elements are divided as follows:

Water	92 lbs.
Albuminoids or protein	27 "
Fats and oils	$22\frac{5}{10}$ "
Carbo-hydrates	$0\frac{1}{10}$ "
Minerals (soda, potash, iron, lime, phosphorus, etc.)	$8\frac{4}{10}$ "
	150 lbs.

The nearer our food comes to this variety and proportion the better it is for the human system. A comparison of the foregoing analyses and ideal requirements of the system, will at a glance show the great advantages of the several products of the Beadleston & Woerz brewery.

THE FUNEREAL MONTH OF MARCH.

An observant metropolitan barber says that he can tell one's physical condition by the state of the hair! The Bible tells us that with his hair gone Samson lost his strength. The Romans considered baldness a serious affliction, and Julius Cæsar was never quite satisfied with himself because his poll was bare. The face, however, is the open book, and one can readily trace in its various expressions, lines, changes and complexion the state of the system. The eye that is unusually bright and yet has a pallid brightness, the face upon whose cheeks nature paints a rose of singular beauty and flush, more marked in contrast with the alabaster appearance of the forehead and nose and lower part of the face, is one of those whom the skilled physician will tell you will some day dread the funereal month of March, because it is then that consumption reaps its richest harvest. Consumption, they tell us, is caused by this, that and the other thing, by microbes in the air, by micro-organisms in the blood, by deficient nutriment, by a thousand and one things; but whatever the cause, decay begins with a cough, and the remedy that will effectually stop the cause of that cough cures the disease of the lungs. That is all there is of it. The cough is an evidence of a wasting. To stop it effectually a remedy must be used that will search out the cause, remove that and then heal the lung and do away with the cough. This is the power, special to itself, possessed alone by Warner's Log Cabin Cough and Consumption remedy. This is no new-fangled notion of narcotics and poisons, but an old-fashioned preparation of balsams, roots and herbs, such as was used by our ancestors many years ago, the formula of which has been secured exclusively by the present manufacturers at great trouble and expense. It is not a mere cold dryer. It is a system-searcher and upbuilder and a consumption expellant. Where others fail it wins, because it gets at the constitutional cause and removes it from the system. J. W. Hensaw, of Greensboro, Pa., on January 15, 1888, reported that "he had derived more real benefit for the length of time, from Warner's Log Cabin Cough and Consumption remedy, than he had for years from the best State Physicians."

If you have a cough, night sweats, "positive assurance in your own mind that you, oh—you, have no consumption," and yet lose flesh, appetite, courage, as your lungs waste away, you may know that soon the funereal month of March will claim you, unless promptly and faithfully you use the article named. If other remedies have failed try this one thoroughly. If others are offered, insist the more on trying this unequaled preparation.

Some persons are prone to consumption, and they should never allow the disease to become seated.

THE MELBOURNE INTERNATIONAL EXHIBITION.

Australia celebrates the centenary of her settlement by a grand international exhibition at Melbourne, commencing August 1st next, and continuing for six months. Congress has appropriated $50,000, will appoint commissioners to represent the United States, and it is hoped that very many private firms will make exhibits. The government of Victoria controls the exhibition, and gives space and steam for motive power free. The exhibition building and annexes will cover twenty-four acres of ground, and the display, both local and from foreign countries, will be the largest ever seen in the southern hemisphere. Goods for exhibition are admitted duty free. Australia is a rich and growing country. American goods sell well there, and the comparative nearness of Australia to America should inspire our business men to control her markets. Mr. John M. Ives, who for the past three years has been in the antipodes as manager for the well-known Safe Cure House of H. H. Warner & Co., has just returned with letters from the chief secretary and commissioners; also blank applications for space, which he will be pleased to send free on application to him at Rochester, N. Y. Applications should be made at once, as goods must be in position not later than July 1st next.

A STEEL BIRD'S NEST.—A bird's nest recently found near Soleure, Switzerland, was made entirely of the imperfect watch springs thrown out from the shops.

"GOOD HEALTH CONTAGIOUS."

An admirable response was that of Colonel Ingersoll, the great orator, to a sneering critic who asked how the universe could be improved: "I would make good health contagious and not disease." The orator to the contrary notwithstanding, there is a certain contagious tendency or quality to good health. A strong, vigorous man or women puts those about him into better spirits and imparts a stimulating tone to the atmosphere that often acts better than any prescription. In this regard good health is contagious, but only in this regard. In the main eternal vigilance is as much the price of health as of liberty. We are too apt to overlook the fact that nature is slow in revealing her secrets. The head of the household seems sound and hale until he falls into a serious malady; the wife and mother continues her daily task and toil until she suddenly breaks down with a fever or dangerous chill; even children play and romp until the stomach, liver or some other vital organ indicates disease in a manner so forcible as to attract parental attention. In all these cases, and they constitute the vast majority when the fact is discovered, it is too late to stem the tide. The processes of treatment, dieting and nursing are called up to check and cure the disorder, and to restore the former health. The amount of time, trouble, pain and expense thus lost to the world is incalculable. Estimating the loss in time alone, it would in a year pay off all the national debts of Europe. Graver is the suffering involved, the misery entailed and the premature passing away of millions. While good health is not contagious, the present condition can easily be ameliorated. Three-fourths of all the disorders which afflict humanity and the seeds of many of the remainder take their origin in impure blood. If the system be kept under surveillance, and whenever it seems to contain any appreciable humors, be purified, the danger of disease becomes almost nothing, and the necessity of subsequent suffering and treatment dispensed with entirely. There are many admirable blood-purifiers in the market. Medical and chemical science have made great progress in this field, and have produced a series of agents of the highest efficiency and value. Of these the greatest and best combination known is Ayer's Sarsaparilla, a compound which while it is a superb medicine for the sick, plays a higher role in purifying the blood and thus preventing all diseases. Its chief ingredients, Honduras sarsaparilla, yellow dock, podophyllin and the iodide salts, are those which physiologic chemistry has demonstrated to be the most efficient, speedy, safe and certain in expelling humors from the system, and restoring the organization to the best attainable health. Combined they are irresistible in their warfare against the elements which, if allowed to accumulate, engender disease and ultimate death. In the combination made by Dr. J. C. Ayer & Co., so perfect a result was attained as to give it a world-wide name and fame, and to make it a standard article in every part of the globe. It is unfortunate that the success of Ayer's Sarsaparilla has emboldened hundreds of unscrupulous dealers to make preparations of their own and to palm these off upon unsuspecting or credulous customers. The only value of these imitations depends upon the closeness of the resemblance to the article sophisticated. While many of these goods are useful, none even begin to equal the original article, and none so restore health and strength, and none so prevent and remedy disease. Its use not only in the sickroom and hospital, where it cures the ills which afflict the race, but also in the home of him who is seemingly well, where it continues and develops well-being, is recommended by all who have given attention to the subject.

A BRIGHT FUTURE

Is simply the natural result of wise action in the present. Money being necessary, in the regular order of things, the chances for making it are observed by the wise. Reader, you can make $1 and upwards per hour in a new line of pleasant business. Capital not needed; you are started free. All ages. Both sexes. Anyone can easily do the work and live at home. Write at once and learn all; no harm done, if after knowing all you conclude not to engage. All is free. Address Stinson & Co., Portland, Maine.

FARMVILLE LITHIA WATER.

The therapeutic value of lithia and salts containing that remarkable alkali becomes better known and appreciated every day. Its singular potency in many of the more serious diseases of the kidney and bladder, has given it a high position in the *materia medica*. Further than that, recent researches tend to show that in the numerous complaints which have been charged to rheumatism, gout, old age and the like, but which are really caused by the presence of chemical compounds in the blood and tissues that have not been removed by the kidneys, lithia gives to the physician a new method of attacking an old evil, and to the patient a new avenue of escape from suffering and possible death. When lithia was found to possess remarkable curative powers, it was at first feared that the supply was too small to meet the demand from the faculty the world ever. With the growth in popularity, there came a corresponding development in its supply and sources. Thus, in the United States, there are no less than thirty lithia springs of more or less value and excellence. Of these, a notable instance is the famous spring at Farmville, Virginia. Its medicinal virtues were known even before the fact of its containing lithia had been discovered, and it enjoyed a wide local popularity and repute. Chemical analysis showed the popularity to be founded on a substantial basis. It went further, and demonstrated the Farmville water to be one of the most efficient and beneficent natural medicines in the world. From that time on the history of the spring has been a long and ever-increasing series of cures. Its water is as rich, powerful and sparkling as when it first attracted public attention. Its analysis to-day varies scarcely a tenthousandth from that of six years ago. This is in marked contrast with those springs which, with increased demand upon their output, change in character and gradually lose the elements by which they were originally distinguished. The Farmville, so far as can be foreseen, will be just as potent for good to sick and suffering humanity a hundred years hence as it is at the present time. With these many and great advantages, it is no wonder that the celebrated spring has gained a cosmopolitan reputation.

CONDENSED CLAM JUICE.

The hygienic value of clam juice was learned by the early Puritan settlers from the Massachusetts tribe of Indians. It underlies the popularity and virtue of the clam soup and chowder so familiar to all Americans. Only through the vast researches made in the past twenty years by physiologic chemistry are we now enabled to understand its superior food quality. All the more common sea-foods contain a juice which holds varying quantities of digestible tonic, and medicinal elements dissolved and suspended in water. Among these elements may be mentioned iodine, phosphorus, lime, magnesia and albumenoids. If oyster or clam juice be boiled, for example, and then filtered, a fine coagulum is separated similar to the white of egg. The value of the juice depends upon the amount of these substances and upon their palatableness and assimilability. With such organizations as a flounder, the juice is thin, unpleasant in taste and somewhat repugnant to the stomach. An oyster has a richer juice, that is much more agreeable to the tongue and gastric system. The juice of the soft shell clam surpasses that of the oyster in turn, while all thus far known are excelled by that from the ordinary clam. It not only is richer in nutrients, but it stimulates both appetite and digestion to a much larger extent. When the stomach rejects all oyster preparations it gratefully accepts clam juice, and in no time converts it into healthful tissue. The scientific reason of this remarkable digestibility lies in the perfect solubility of all the constituents. Even the unstable albumenoids appear to be partially peptonized by some of the natural fluids of the mollusk, as they never clot nor harden under any circumstances. For this reason, it can be used with benefit by nursing mothers, dyspeptics, invalids, the very young and very aged. It is of equal value in such gastric disorders as sea-sickness, bilious nausea and chronic indigestion. Heretofore, one practical difficulty has prevented the general use of clam juice, whether as medicine or food. Unless consumed when freshly made at the market, it spoiled in a very brief period and lost all the qualities which gave it its value. This difficulty is now destroyed by a new method introduced by Robert Gordon, a member of the house of Jones, Gordon & Co., of 204 West Street, New York City. By this system the fresh clams are thoroughly cleaned, opened and the liquor put aside. The bodies are cut up, pressed, and all the rich juices of the flesh extracted. Both the loose and the expressed juice are filtered free from all loose or finely suspended organic matter and carefully packed in air-tight glass jars. It is, of course, richer, purer and handsomer than that which is retailed by the best dealers of Fulton Market. In the jars it will keep for an unlimited period and never undergo any change. As a result, it is now found in the great magazines of San Francisco, Chicago, St. Louis and other leading Western cities, as well as upon the Atlantic seaboard. A careful examination of the Gordon Condensed Clam Juice, shows it to be absolutely pure, sweet and fresh, richer and more nutritious than the ordinary article in the market, and in every way suited for hotels, hospitals and homes, for the physician and patient as well as for him who knows that comfort and well-being are based upon superior food.

A HEALTHY, COOL MATTRESS.

In contrast with the unhealthy flock or pig's hair mattresses mentioned in a previous number, we desire to call the reader's attention to the Torsion Braided Wire Mattresses, Pillows, Cushions, etc.

The manufacture of these originated in the invention, in 1882, by Dr. Henry Weston, of Philadelphia, of the Cylindrical Braided Wire Pillow. It was found that no metal in that form would long retain its elastic power, and the successful application of the principle was attained only after more than two years' study and the outlay of several thousand dollars in experiments, in the invention by Mr. Joseph L. Wells, of Philadelphia, of the Braided Wire Torsion Spring, by which perfect resiliency is obtained, pressure on any part, and in any degree of force or continuance, causing the wire to twist instead of bending or breaking. The Health Braided Wire Mattress, complete in itself, requiring no hair or other mattress or spiral springs or woven bed bottom. It cannot absorb odors, become musty or retain perspiration or disease germs, the covering being so arranged that it can be removed and washed. These advantages cannot be over-estimated, especially in contagious diseases. It is as soft and pleasant as feathers or any other material, and cannot become heated, as each slight movement changes the air beneath, while the temperature can be regulated by placing over it any desired amount of covering. As a luxury nothing can surpass it, especially in warm weather. No material is used that will attract bugs, moths, or other insects. No dust can be collected and retained to puff out through the covers when bedding is shaken or beaten. To secure an absolutely comfortable, sweet and pure resting place for the body during the nearly one-third of the natural life which is spent in bed, is one of the most important objects of thought and care, for upon healthful sleep depend all the successes and pleasures of our waking hours.

We shall again refer to this practical invention in a subsequent number.

DR. JENSEN'S REMOVAL.

Dr. Carl Jensen has removed his pepsin manufactory from Philadelphia to a large new three-story brick building at the foot of 40th St., N. R., New York. The building is 25x100 feet and fitted up in the most convenient manner to facilitate the manufacture of Dr. Jensen's goods, the demand for which has so steadily increased that this removal to the metropolis became necessary. Some idea of the magnitude of the business may be formed from the fact that it took seventeen double and seven single trucks with seven freight cars to convey only the machinery from Philadelphia. The office, and bottling and packing departments will continue at 161 West 23d St.

CONSTIPATION, HEMORRHOIDS.

C. B. Horrell, M.D., Colchester, Ill., says: After a careful trial of Acid Mannate, I have no hesitancy in reccommending it as a safe and reliable laxative. For ladies, it is indeed a God-send, being quite palatable and effective. In the temporary hemorrhoids sometimes following parturition, my patients invariably acknowledge relief after one or two doses of the Acid Mannate are administered.

"The girl I left behind me" uses Crystal Blue. ***Its wonderful*** tint matches her eyes.

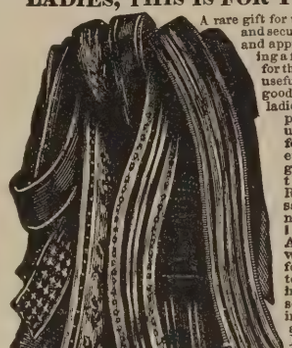
Viburnum compound is not poisonous, and though powerful for good in its usual doses, is not dangerous even in an overdose—a very safe test for a medicine.

$85 Solid Gold Watch Free!

This splendid, solid gold, hunting-case watch, is now sold for $85; at that price it is the best bargain in America; until lately it could not be purchased for less than $100. We have both ladies' and gents' sizes with works and cases of equal value. **ONE PERSON** in each locality can secure one of these elegant watches absolutely **FREE.** These watches may be depended on, not only as solid gold, but as standing among the most perfect, correct and reliable timekeepers in the world. You ask how is this wonderful offer possible? We answer—we want one person in each locality to keep in their homes, and show to those who call, a complete line of our valuable and very useful HOUSEHOLD SAMPLES; these samples, as well as the watch, we send ABSOLUTELY FREE, and after you have kept them in your home for 2 months, and shown them to those who may have called, they become entirely your own property; it is possible to make this great offer, sending the **Solid Gold Watch** and large line of valuable samples FREE, for the reason that the showing of the samples in any locality, always results in a large trade for us; after our samples have been in a locality for a month or two, we usually get from $1,000 to $5,000 in trade from the surrounding country. Those who write to us at once will receive a great benefit for scarcely any work and trouble. This, the most remarkable and liberal offer ever known, is made in order that our valuable Household Samples may be placed at once where they can be seen, all over America; reader, it will be hardly any trouble for you to show them to those who may call at your home, and your reward will be most satisfactory. A postal card, on which to write us, costs but **1** cent, and if, after you know all, you do not care to go further, why no harm is done. But if you **do** send your address at once, you can secure, FREE, AN ELEGANT **$85,** SOLID GOLD, HUNTING-CASE WATCH and our large, complete line of valuable HOUSEHOLD SAMPLES. We pay all express, freight, etc.
Address, STINSON & CO., BOX 356 PORTLAND, MAINE.

SILK AND SATIN RIBBONS FREE!

LADIES, THIS IS FOR YOU!



A rare gift for the ladies. Save much money and secure the best! Every lady knows and appreciates, the privilege of having a few remnants of ribbon, handy for the thousand and one tasty and useful purposes for which such goods are used, and which they, the ladies, use to such advantage. To purchase what is wanted at the usual prices such goods are sold for, would create a large bill of expense, and therefore debars a great many from indulging their tastes in this direction. Realizing that there were thousands upon thousands of remnants of ribbons among the large importing houses of America which they would be willing to dispose of in bulk, for a small fraction of their cost, to any one capable of purchasing largely, we instituted a search, resulting in our obtaining the entire stock of **Silk** and **Satin Ribbon Remnants** of several of the largest of these houses, who imported the finest goods. These goods may be depended upon as superior to anything to be found, except in the very best stores of America. Yet they are given away **free;** nothing like it ever known. A grand benefit for all the ladies; beautiful, elegant, choice goods absolutely **free.** We have expended thousands of dollars in this direction, and can offer an immensely, varied, and most complete assortment of ribbons, in every conceivable shade and width, and all of excellent quality, adapted for neck-wear, bonnet strings, hat trimmings, bows, scarfs, dress trimmings, silk quilt work, etc., etc. Some of these remnants range three yards and upwards in length. Though remnants, all the patterns are new and late styles, and may be depended on as beautiful, refined, fashionable and elegant. **How to get a box containing a Complete Assortment of these elegant ribbons Free. The Practical Housekeeper and Ladies' Fireside Companion,** published monthly by us, is acknowledged, by those competent to judge, to be the best periodical of the kind in the world. Very large and handsomely illustrated; regular price 75 cts. per year. Send **35** cents and we will send it to you for a trial year, and will also send **free** a box of the ribbons; 2 subscriptions and 2 boxes, **65** cts.; 4 subscriptions and 4 boxes, **$1.** One-cent postage stamps may be sent for less than $1. Get **3** friends to join you thereby getting 4 subscriptions and 4 boxes for only $1; can do it in a few minutes. The above offer is based on this fact:—those who read the periodical referred to, for one year, want it thereafter, and pay us the full price for it; it is in after years, and not now, that we make money. We make this great offer in order to at once secure 250,000 new subscribers, who, not now, but next year, and in years thereafter, shall reward us with a profit, because the majority of them will wish to renew their subscriptions, and will do so. The money required is but a small fraction of the price you would have to pay at any store for a much smaller assortment of far inferior ribbons. Best bargain ever known; you will not fully appreciate it until after you see all. Safe delivery guaranteed. Money refunded to any one not perfectly satisfied. Better cut this out, or send at once for probably it won't appear again. Address,
H. HALLETT & CO., PUBLISHERS, PORTLAND, MAINE.

FANNY DAVENPORT.

A LETTER TO THE PUBLIC FROM THIS ACCOMPLISHED ACTRESS.

PROVIDENCE, April 7th.

MY DEAR MADAM,—Purely by accident one day in Chicago I bought a pot of your Cream, because the jar was so pretty, and on trying it found it the most delightfully refreshing thing I have ever applied to my skin. Most assuredly you have made a marvellous discovery, and one and all of our sex should heartily thank you. I find it is not only a refreshing, softening article for the skin at night, but for the day use also. Please send me some of the Balm and another jar of the Cream to the Brunswick, Boston, and believe me, very thankfully yours. FANNY DAVENPORT.

Mrs. Ayer's assurance of the efficacy of the Recamier preparations has brought these justly celebrated articles into universal use by all women, old and young. They are in no sense cosmetics, as evidenced by their winning the first prize at the American Exhibition in London, 1887. Mrs. Ayer used them herself for years before the necessity arose to manufacture them for sale. The Recamier Cream and Lotion will remove pimples, blackheads, liver spots and all of the various imperfections which render their victims hideous and repulsive, alike to men and women. Recamier Powder is the purest powder ever made. It will not rub off or make the face shine. (A sample wi be mailed you free on application.) Recamier medicated soap is the purest and best. Madame Patti, in a letter of recent date, declares it excels all others. Any woman wishing to preserves healthy body, firm to the touch and fair to the eye, with the elasticity of youth well prolonged into age, should sponge the entire body with Recamier lotion after the daily bath. Refuse all substitutes for the Recamier preparations, even though represented "just as good." Several women have been severely injured by these fraudulent imitations made to sell on the reputation of the genuine articles.

Subscriptions $1 per year. Now is the time to subscribe.

J. HENRY HENTZ. J. P. ROBINETT. J. HENRY HENTZ, Jr.

ESTABLISHED 1793.

WHITE, HENTZ & CO.,

SOLE PROPRIETORS OF

Trimble and Pennsylvania Monogram Whiskies.

222 and 224 NORTH SECOND ST., PHILADELPHIA.

D. LIEBER, 17 South William St., New York. Col. H. A. SELIGSON, 1200 Pennsylvania Ave., Washington, D. C.

A BUSINESS BENEFIT.

ADVANTAGES TO ADVERTISERS OFFERED BY THE AMERICAN ANALYST.

It has not the limitations of a daily paper. No one reads yesterday's paper. A monthly lives at least a month, while a semi-monthly is fresh twice a month, and its audience is not limited by geographical lines, but the circulation is all over the United States and Canada.

It contains matters of interest to everyone, especially the ladies of the household, and is, therefore, sure of a careful perusal. Our audiences are intelligent and of the better classes, who have money to spend, and any well worded advertisement in our columns, giving real information, will receive a careful perusal.

Our rates are as low as our circulation affords. Large circulation and original matter cost money, and those advertisers who desire to realize these benefits must expect to pay reasonably for them.

Advertisements in our columns are permanent. Most of our subscribers bind their numbers.

Our advertisements are set up in an attractive form, sure to call the attention of the reader.

Anything that our readers want, or for which a demand is to be created, not wholly of a local nature, will pay to advertise with us.

We take only advertisements from legitimate houses of really meritorious goods, and give them all the editorial assistance they deserve; consequently our readers knowing this, have confidence in advertisements contained in our columns.

The fact that we have the best and largest houses in every branch of trade advertising with us, and that they always renew as their seasons arrive, proves beyond a doubt that they have found the AMERICAN ANALYST a good advertising medium. Why should not you?

CALIFORNIA

Fine Table Wines

From our Celebrated Orleans Vineyard.

Arpad Haraszthy & Co.

Producers of the

ECLIPSE

CHAMPAGNE,

530 Washington St.

SAN FRANCISCO.

PARK & TILFORD. New York, C. JEVNE & CO., - - Chicago, } Agents.

THE LESLIE E. KEELEY CO.



DWIGHT, ILLINOIS.

We solicit an investigation of our system and methods and will gladly send to any one, very interesting reading matter on the OPIUM HABIT, DRUNKENNESS and their effects and cure. Physicians specially invited to examine, and if desirous of trying our remedies, liberal arrangements will be made with them. Prompt and frank attention to correspondence. The remedies are put up safely in stout boxes and sent masked. Full directions sent.

THE LESLIE E. KEELEY CO.,

Dwight, Illinois.

ESTABLISHED 1872.

GELATINE.

JAMES CHALMERS' SONS'

Transparent Gelatine.

PURITY—STRENGTH.

Best for Family Use.

Jellies, Blanc Mange, Etc.

ACKLOWLEDGED BY EVERY ONE EQUAL TO THE BEST.

Subscriptions $1 per year. Now is the time to subscribe.

Natural Lithia Water.

FARMVILLE LITHIA WATER

FROM VIRGINIA.

—Not only Relieves, but—

CURES

Bright's Disease, Kidney Troubles of all Kinds, Rheumatism, Rheumatic Gout, Dyspepsia, Bladder Troubles, Diabetes, Calculi, Albuminuria. Without Taste or Odor. An Unapproachable Record in Results.

Sold by HAZARD, HAZARD & Co., Fifth Avenue Hotel, and other first-class Pharmacists. Pamphlet free upon application.

FARMVILLE LITHIA SPRINGS CO.,

298 Broadway, New York, and Philadelphia.

TORSION BRAIDED WIRE MATTRESSES

AND PILLOWS.

THE BRAIDED WIRE MATTRESS

complete in itself, requiring no hair or other mattress or spiral springs or woven bed bottom.

It cannot absorb odors, become musty or retain perspiration or disease germs, the covering being so arranged that it can be removed and washed.

It is as soft and fresh as feathers or any other material, and cannot become heated, as each slight movement changes the air beneath, while the temperature can be regulated by placing over it any desired amount of covering.

As a luxury nothing can surpass it, especially in warm weather.

No material is used that will attract bugs, moths or other insects.

No dust can be collected and retained to puff out through the covers when bedding is shaken or beaten. To secure an absolutely comfortable, sweet and pure resting place for the body during nearly one-third of the natural life which is spent in bed, is one of the most important objects of thought and care, for upon healthful sleep depend all the successes and pleasures of our waking hours.

Send for Circular.

THE TORSION BRAIDED WIRE UPHOLSTERING CO.,

No. 1017 Chestnut Street,

PHILADELPHIA, PA.

DANGER IN UNBOILED MILK.—According to the *Lancet*, milk epidemics of typhoid fever and diphtheria have repeatedly shown how severely the incidence of the disease has been felt those using unboiled milk. It has been shown that the cow may suffer from a disease which at present is rarely, if ever, regarded as of any importance by dairymen, and which may give to the milk a power of producing scarlet fever in those who consume it in its raw state.

NATRONA BI-CARBONATE OF SODA.

(ABSOLUTELY PURE.)

NATRONA



TRADE MARK

SODA

The nature of the raw material from which NATRONA BI-CARBONATE OF SODA is made—viz., kryolith, a mineral containing *pure sodium*—insures a purity and uniformity of product which cannot be obtained from any other known material. In making BI-CARB. SODA from any other raw material, the use of sulphuric acid is a necessity, but none is used in any part of the process of making NATRONA BI-CARB.; hence its entire freedom from the slightest trace of arsenic, which is always present in ordinary soda. Its absolute purity and entire freedom from all traces of *sulphate of soda*, common salt and other impurities, render NATRONA BI-CARB. NEARLY TASTELESS, and being bolted through the finest bolting-cloth, insures the finest stage of division.

To these indisputable facts the attention of CONSUMERS of soda is specially called. They are IMPORTANT, and should influence both those who use and those who sell soda, to buy and sell NONE BUT THE BEST.

The NATRONA BI-CARB. Soda is kept in stock by almost every wholesale druggist and grocer throughout the United States, of whom it may be ordered.

Natrona Bi-Carb. Soda is unequaled by any other brand of English or American Manufacture.

PENNA. SALT MANUFACTURING CO.,

NATRONA CHEMICAL WORKS. PHILADELPHIA, PA.

ARMOUR & CO.

CHICAGO, ILLS.

PACKERS OF

Pork and Beef Products

CANNED MEATS,

ETC.,

FOR HOME CONSUMPTION AND FOR EXPORT

TO ALL PARTS OF THE WORLD.

Also,

SHIPPERS OF

Choice Dressed Beef,

MUTTON AND HOGS,

In Refrigerator Cars,

To BOSTON,

NEW YORK,

PHILADELPHIA,

BALTIMORE,

And other cities throughout the country.

CARNRICK'S SOLUBLE FOOD

FOR INFANTS AND CHILDREN.

For Mothers, Invalids, Dyspeptics & Aged People.



THE ONLY FOOD *that digests as easily as human milk, and agrees with all infants and children.*

THE ONLY FOOD *that thoroughly nourishes the child without the addition of cow's milk.*

THE ONLY FOOD *that removes from infancy all necessity, danger and annoyance of a wet nurse.*

TAKEN BY MOTHERS *once or twice a day the quantity of milk will be increased and quality at once improved.*

IF THE CHILD IS RESTLESS, *change partially from nursing to* **SOLUBLE FOOD.**

DR. STUTZER, Food Analyst for Rhenish Prussia, says: "CARNRICK'S SOLUBLE FOOD is the best of all the foods I have ever examined."

"OUR BABY'S FIRST AND SECOND YEARS," by Marion Harland. Book of 64 pages, giving careful instructions for bringing up the little ones. Sent free by

REED & CARNRICK, N. Y.



GOLD MEDAL, PARIS, 15

BAKER'S

Breakfast Cocoa.

Warranted ***absolutely pure Cocoa,*** from which the excess of Oil has been removed. It has *three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup.* It is delicious, nourishing, strengthening, easily digested, and admirably adapted for invalids as well as for persons in health.

Sold by Grocers everywhere.

W. BAKER & CO., Dorchester, Mass.

"HUNTER'S INVISIBLE"

MEDICATED FACE POWDER.

An Exquisitely Delicate Preparation

For Beautifying the Complexion.

DELIGHTFULLY FRAGRANT. PERFECTLY HARMLESS.

Flesh, Pearl, Blonde and Brunette Tints.

The Closest Scrutiny Fails to Detect its Use!

25 CENTS EVERYWHERE. BEWARE OF IMITATIONS.

AGENTS WANTED to Canvass for Advertising Patronage. A small amount of work done with tact and intelligence may produce a considerable income. Agents earn several hundred dollars in commissions in a single season and incur no personal responsibility. Enquire at the nearest newspaper office and learn that ours is the best known and best equipped establishment for placing advertisements in newspapers and conveying to advertisers the information which they require in order to make their investments wisely and profitably. Men of good address, or women, if well informed and practical, may obtain authority to solicit advertising patronage for us. Apply by letter to GEO. P. ROWELL & Co., Newspaper Advertising Bureau, 10 Spruce St., New York, and full particulars will be sent by return mail.

GILBERT S. GRAVES

STANDARD STARCH.

MANUFACTURED WITH ENTIRELY NEW MACHINERY AND BY LATEST IMPROVED PROCESS.

IT IS GUARANTEED to be fully equal to BRANDS SOLD AT FANCY PRICES, and MUCH SUPERIOR TO STARCH SOLD AT EQUAL PRICES.

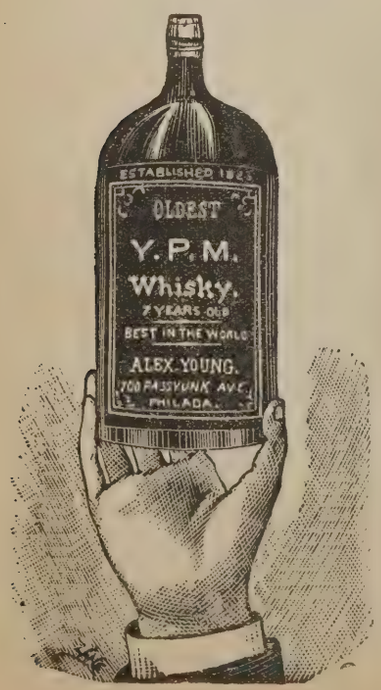
THE MIRROR GLOSS

Is the finest Starch made for the Laundry, and cannot be excelled. It will not injure the finest Laces.

THE CORN STARCH

For culinary purposes is prepared with the greatest care, from selected Corn, and is a most delicious and wholesome article of food.

ASK YOUR GROCER FOR IT.



ESTABLISHED 1823.

ALEX. YOUNG CO., Limited

DISTILLERS OF

Y. P. M. WHISKIES

DISTILLERY,

Nos. 408, 410, 412 and 414 South Street.

MALT HOUSE,

416, 418, 420, 422 and 424 South Street,

STORE,

No. 700 Passyunk Avenue.

PHILADELPHIA, PA.

OUR MISSION.

WHAT THE AMERICAN ANALYST IS DOING.

FIGHTING ADULTERATION.

The steadily growing favor which the AMERICAN ANALYST is constantly receiving at the hands of both the reading and the business public is the best evidence that could be afforded of the useful field of effort it occupies. It was the pioneer journal in this country to take up the fight against adulteration, and stands to-day, by public acknowledgment, the only competent exponent of the principles involved in that momentous struggle. To this end the realm of sophistication and fraud has been thoroughly explored, and its corruptions, as far as practicable, exposed to the public view. Charlatans, adulterators, and handlers of poisonous food have been summarily and uncompromisingly dealt with. Humbugs seeking to enrich themselves, through the sale of high-sounding specifics for human ailments, have been subjected to the crucial test of thorough chemical analysis of their goods, and where the latter, as too frequently occurred, proved to be utter frauds in name, composition, and pretended effects upon the system, the real facts have been placed before our readers in order to save the public from further unconscious imposition. The veil of chemical mystery in which tricksters of this kind ostentatiously envelop their processes of manufacture, protects them as yet from the criminal laws to which other confidence operators are held amenable, and the only method for counteracting their nefarious schemes is through public exposure by the newspaper press. In exposing this species of fraud, the AMERICAN ANALYST has conferred a benefit upon the community, to which the latter is giving grateful and substantial recognition.

SANITARY AND FOOD REFORMS.

In addition to the foregoing, the AMERICAN ANALYST is in constant co-operation with the Boards of Health of this and other cities, in efforts to secure sanitary and food reforms through organized methods, and while it is nobody's mouthpiece, it is conceded to be the only popular medium through which those bodies can bring their purposes and action intelligently before the general public. Reaching as it does all classes, manufacturers, merchants, physicians, chemists and private families all over the land, its influence is exerted over a vast radius, producing results as visibly marked as they are widespreading.

HOUSEHOLD MATTERS.

"The American Household," edited by Miss Juliet Corson, is a department of special interest to ladies. It is very different and far superior to the ordinary cook book in that it tells the housewife suggestively what to buy, what foods are in season, as well as how to prepare the many varieties of dishes, all in a practical way easily followed. Other matters of great interest to housewives are also discussed.

VOLAPUK.

Among the striking features of this Fourth Volume will be a course of progressive lessons in the new Universal Language, Volapuk, so arranged as to enable our readers to readily instruct themselves in this commercial tongue. This series alone will be found to be worth several times the cost of a year's subscription.

SCIENTIFIC INVESTIGATION.

The business transacted in the office of the AMERICAN ANALYST does not by any means all come to the surface in the pages of the paper. Minute analyses of chemical compounds, careful assays of minerals, examinations of questionable oils or doubtful condiments, and the many subtle operations incident to laboratory work are constantly required of us by correspondents far and near, and the results in many cases are not publicly recorded. In this manner, the influence of the paper encompasses a vast radius, from every point of which we receive constant expressions of approval, verbally, and in more substantial shape.

SUBSCRIPTION $1 PER YEAR.

Considering the amount of practical information regularly embodied in its contents, together with the fact that the subscription price for an entire year is only one dollar we believe the day is approaching when the AMERICAN ANALYST will be regularly welcomed in every intelligent household in the land. Address,

ANALYST PUBLISHING CO.,
19 *Park Place, N. Y.*

Robert Gordon's

TRADE MARK.

SPICED ✣ SEA ✣ FOODS

(IN GLASS.)

OYSTERS, LITTLE NECK CLAMS, MUSSELL, SHRIMP, LOBSTER, Etc.,

Packed in 8 and 16 oz. Jars. Guaranteed to be strictly Pure.

MADE OF THE FINEST MATERIALS.

—ALSO,—

ROBERT GORDON'S CONDENSED CLAM CHOWDER,

In 3-lb Cans. Cheapest and Best in the Market.

MANUFACTURED BY

JONES, GORDON COMPANY, Limited,

204 West Street, New York.

FAT — **CORPUS LEAN** *will reduce fat at the rate of 10 to 15lbs. per month without affecting the general health.* **6c.** *in stamps for circulars covering testimoni als.* S. E. MARSH CO., **2315** *Madison Sq., Philadelphia, Pa.*

MADE

ABSOLUTELY HARMLESS *simply stopping the FAT-producing effects of food. The supply being stopped the natural working of the system draws on the fat and at once reduces weight.* — LEAN

ESTABLISHED 1857.

J. H. CUTTER,

OLD

BOURBON AND RYE WHISKIES.

We are the Sole Owners and Proprietors of this Celebrated Brand of Whiskey.

C.P.MOORMAN & CO. **LOUISVILLE. KY.**

We Guarantee the Superior Quality and Absolute Purity of every Barrel of Whiskey sold by us under this Brand.

W. P. FESSENDEN, Agent for N. E. States, Maryland and Penn., 11 Central St., Boston.

THE OLDEST.

THE GENUINE EAU DE BOTOT BOTOT WATER

THE ONLY DENTIFRICE APPROVED BY THE ACADEMY OF MEDICINE OF PARIS, FRANCE.



FOR MORE THAN A CENTURY IN GENERAL USE IN EUROPE.
SOLE AGENT FOR THE UNITED STATES. FREDERIC REISET. 44 BEAVER STREET. NEW-YORK.

THE BEST.

SEND

YOUR WIFE

—THE—

American ✣ ✣ Analyst.

$1.00 A YEAR.

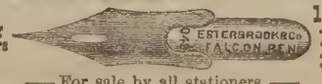
RHEUMATISM

is a blood disease and *Corey's Mexican Remedy a positive cure.* Purely vegetable. Not a case of failure known. So strong is our faith, we will send one bottle to any sufferer *free.* Address

THE IDEAL MEDICINE CO., 19 Park Place, New York City.

ESTERBROOK'S STEEL PENS

Leading Numbers — 14,048,128 130, 135, 333, 161.



—For sale by all stationers.—

THE ESTERBROOK STEEL PEN CO., 26 John St., N. Y.

WORKS: CAMDEN, N. J.

1888. 1888.

THE

American Analyst.

VOLUME FOUR.

THE new Volume now beginning will contain, besides the various Departments which have given such universal satisfaction, several NEW FEATURES of great popular interest and value. Among these will be

EASY LESSONS IN VOLAPUK.

AN EXHAUSTIVE SERIAL TREATISE ON AMERICAN WINES.

FOOD ADULTERATION FROM A NATIONAL STANDPOINT.

THE LARD ADULTERATION QUESTION.

INVESTIGATION OF ALUM BAKING POWDERS.

INFORMATION FOR AMERICAN HOUSEWIVES.

And full discussions of a great variety of practical, economical subjects relating to the household and important to the housekeeper, such as can be found in no other journal in America.

— *SUBSCRIPTION, $1.00 PER YEAR.*—

ADDRESS:

AMERICAN ANALYST,

No. 19 Park Place,

NEW YORK.

UNEQUALLED Ask your Grocer for, and insist on having, **LEA & PERRINS'** Sauce, "The Worcestershire." It is known throughout the whole civilized world as the Best and most Delicious Sauce. **DELICIOUS.**

SCOTCH MARMALADE, Jams, Fruit and Wine, Jellies, &c.
By James Keiller & Son, Dundee.

SCOTCH BISCUITS, Albert, Water, and Oat Cake,
By Robert Middlemass & Son, Edinburgh.

RACAHOUT des Arabes, by De Langrenier, Paris.

BAY WATER, West India, (J. D. S. brand), in cases, one dozen bottles.
Sold by all first-class Grocers.

JOHN DUNCANS' SONS, 43 Park Place, New York. Agents for the United States.

THURSTON'S IVORY PEARL TOOTH POWDER
WILL KEEP THE TEETH IN PERFECT CONDITION AND THE GUMS HEALTHY.
Price 25 & 50 Cents PER BOTTLE.



LADIES
Enamel your Ranges twice a year, tops once a week and you have the finest-polished stove in the world. For sale by all Grocers and Stove Dealers.

Sura Cura ROBINSON'S SURE CURE FOR **RHEUMATISM And NEURALGIA,**
And remedy for diseases arising from an impure state of the blood. An antidote for **MALARIA.** Price 50 c. and $1. Sent by mail on receipt of price. Send for Circular.
R. W. ROBINSON & SON,
184 Greenwich Street,
NEW YORK.
Sura Cura

GOLD You can live at home and make more money at work for us than at anything else in the world. Either sex; all ages. Costly outfit FREE. Terms FREE. Address, TRUE & CO., Augusta, Maine.



These Goods are "Par Excellence,"
Pure, Healthful and Reliable, warranted to give satisfaction in every particular.
For sale by wholesale and retail grocers throughout the United States. VOUWIE BROS., Manufacturers CLEVELAND and CHICAGO.

PROTECT YOUR HOMES!

MARLIN DOUBLE ACTION REVOLVER.

A GOOD REVOLVER no longer costs a Fortune

These revolvers are an exact duplicate of the celebrated SMITH & WESSON. .38 Caliber, using Centre-Fire Cartridges.



Self-Cocking, Automatic Ejecting,
FULL NICKEL PLATED, RUBBER HANDLE.
WARRANTED EQUAL IN EVERY RESPECT TO THE **SMITH & WESSON.**
For sale by Hardware and Gun Dealers everywhere.
Manufactured by THE MARLIN FIRE ARMS CO., New Haven, Conn.



BEST IN THE WORLD!

MARLIN Magazine Rifle.
For large or small game, all sizes. The strongest shooting rifle made. Perfect accuracy guaranteed, and the only absolutely safe rifle on the market
BALLARD GALLERY, SPORTING AND TARGET RIFLES, world renowned. Send for Illustrated Catalogue. **MARLIN FIRE ARMS CO., New Haven, Conn.**



IDEAL RELOADING TOOLS
WILL SAVE ONE-HALF THE COST OF AMMUNITION.
Made for all sizes of Cartridges which are used in any of the following Rifles or Pistols: Marlin, Colt's, Winchester, Ballard, Stevens, Remington, Whitney-Kennedy, Smith & Wesson; also for all gauges and makes of
SHOT GUN SHELLS, PAPER AND BRASS.
Cheaper and better than any other. Send for Price List of these tools to
Ideal Manufacturing Company,
Box 1064 G. NEW HAVEN, CONN.



CUM HOC SIGNO  COGNITUS EST

LIQUID

PANCREOPEPSINE

(WARNER'S DIGESTIVE FLUID.)

FOR THE CURE OF

DYSPEPSIA AND MALARIA

This preparation contains in an agreeable form the natural and assimilative principles of the digestive fluids of the stomach and duodenum, comprising **Pancreatine, Pepsin, Lactic and Muriatic Acids.** The best means of re-establishing digestion in enfeebled stomachs, where the power to assimilate and digest food is impaired, is to administer principles capable of communicating the elements necessary to convert food into nutriment.

It is usually given in doses of from one to two tablespoonfuls after each meal, with a small proportion of water or wine, or alone, as it is very pleasant and agreeable to the taste.

Put up in Sixteen-ounce French Square bottles, for Physician's prescriptions, and druggists can attach a label with doctor's directions.

WILLIAM R. WARNER & CO.,

1228 Market Street, Philadelphia.

22 Liberty Street, New York.

SUPPLIED BY ALL DRUGGISTS.



The "Best" Tonic

A Concentrated Liquid Extract

OF

MALT AND HOPS.

Invigorating

and

Nutritious.



INSURES

A

Healthy Appetite

—AND—

AIDS DIGESTION.

STRENGTHENS THE SYSTEM.

One of the Most Efficacious Remedies for Dyspepsia.

INDISPENSABLE FOR NURSING MOTHERS. THE MOST WHOLESOME TABLE BEVERAGE.

The "BEST" Tonic is manufactured from the Best Malt and Choicest Hops and neither Alcohol, Spirits nor Chemicals of any kind are used in its preparation.

MANUFACTURED ONLY BY

Specialty Department, **PHILLIP BEST BREWING CO.,**

Eastern Depot, 28 College Place, N. Y.

General Office, - - - - MILWAUKEE, WIS.

SWIFT'S

Choice Chicago Dressed Beef

—AND—

MUTTON.

CAN be found at all times in full supply and at popular prices at the branch houses in all the larger cities and is retailed by all first class butchers.

The trade of all marketmen and meat dealers is solicited for our Wholesale Branch Houses, and the public may rest assured that in purchasing our meat from dealers they will always receive the best.

SWIFT AND COMPANY,

UNION STOCK YARDS,

CHICAGO, ILLS.

Tabasco Pepper Sauce

OR LIQUID PEPPER.

Is simply the Pulp of the Ripe Pepper Extracted by Pressure.

The seed of this Pepper was obtained from Central America, and by careful cultivation in Louisiana for many years has been so improved in strength, flavor and aroma, as to have become a new variety of Red Pepper, superior to all others. The pulp is so handled as to retain all the flavor, strength, aroma and color of the ripe fruit, and to keep unimpaired in any climate. It excites the appetite, promotes digestion, and is pronounced, by connoisseurs, to be the finest condiment in the world. For medicinal purposes it recommends itself by its purity, strength and diffusible form.

Manufactured by E. McILHENNY,

NEW IBERIA, LA.

For Sale by all Wholesale Grocers.

ON THE USE OF PURGATIVES.

BY CHARLES A. HOFF, M. D., ST. LOUIS, MO.

Of all preparations contained within the *pharnacopœia,* there are none, apparently, held in higher esteem by mankind than that class of medicines, commonly known as purgatives. The busy practitioner confidently prescribes them with variable frequency, singly and combined, from the date of the writing of his very first prescription to that of his last; and the corner druggist rarely sees a day pass over his head on which he does not greet the customer who has called around to get "something to act upon his bowels." Indeed, the inevitable purgative awaits the tiny baby screaming in its first attack of colic; it is resorted to by the invalid weighted down with years of suffering and disease; and it is by no means despised by the individual in robust health, when assailed by the various petty ills, which even the most vigorous seldom entirely escape.

Notwithstanding the fact that purgatives are so generally prescribed by the physician, and so frequently resorted to without advice by the patient, they are not altogether incapable of doing harm. As everybody knows, the habit of purging the system repeatedly with salines, cholagogues, hydragogues, or drastics, is a most pernicious one; and the physician who fails to exercise a proper care, both in the selection and the administration of cathartics will sooner or later bankrupt the health of his patients as well as his own hard earned reputation.

Constipation is a complication of so many disorders, a symptom of so many diseases that its treatment in different cases depends upon very different considerations. For a simple, ordinary attack, the average doctor has been accustomed to use a simple purge, such as castor oil, sulphate of magnesia, rhubarb, senna, aloes, colocynth, blue pills, etc.; yet in none of these, can it be truly said, has there been found all that could be wished for, even in so simple a matter as a laxative. Where can we find the physician who has not been vexed and annoyed at the complaints of his patients against the purgative medicines he has been accustomed to prescribe. Some people there are who can not or will not swallow pills; many object to the nauseating castor oil; not a few oppose the use of salines since they are disagreeable both in taste and effect; many look upon all resinous cathartics as objectionable on account of their so called heating properties; aloes is objected to in pills and especially in pregnancy; elaterium is said to be excessively harsh and severe, croton oil is known to be dangerous; podophyllin causes an undue amount of griping; blue mass is avoided on general principles; and so on to the end of the chapter.

Fortunately, however, the physician of the present need no longer be placed in a dilemma when called upon to prescribe a preparation free from the faults enumerated in connection with ordinary purgatives. The pharmacist has bravely come to his aid with a formula of incomparable excellence; and this preparation, a combination of "manna, purified cathartic acid and fruit juice," although but recently brought to the notice of the medical world, is, nevertheless, already regarded as a most valuable addition to the resources of medicine.

The happy thought that suggested the combination known as the Rio Chemical Co.'s Acid Mannate justly challenges unlimited admiration and esteem, and has thus far evoked from the profession an almost universal verdict of commendation and praise. Prompt, mild and certain in its action, Acid Mannate may well be considered an ideal remedy in the constipation of pregnancy. Being pleasant to the taste, and continuing its good work without increased dosage, it is pre-eminently adapted to cases of habitual constipation. Indeed, in its wide range of adaptability as an aperient medicine it is impossible to exaggerate its importance, or allude either directly or indirectly to the vast variety of its beneficial, therapeutical properties.

The importance of laxatives is probably nowhere appreciated so much as in the constipation of pregnancy; and it is to this fact, no doubt, more than to any other, that Acid Mannate owes its great popularity and fame among remedial agents. The testimony of thousands of honorable medical gentlemen leading us to believe that, through the beneficent effect of this same elegant formula, constipation need not hereafter, as in the past, be regarded as one of the most troublesome attendants upon gestation. Moreover, the atrocious female pill of unknown composition but of dire effect, which has deluged the drug market for ages, we may consider as having had its day; and it is to be hoped that, since the physician is now in possession of a purgative especially suited to the period of gestation, female life will be less frequently harassed by the ails and aches said to be peculiar to the sex; and that miscarriages, displacements, granular erosions, congestions, headaches, dyspeptic and hypochondriacal attacks, and the whole long train of aches, pains and nervous ills will grow less familiar to the medical profession in the same ratio that the physician increases his familiarity with the actions of Acid Mannate.

A full sized bottle of Acid Mannate will be sent free to any Physician who desires to test it, if he will pay the express charges and mention this Journal, on application to the

RIO CHEMICAL CO.,
St. Louis, Mo.

GORDON & DILWORTH

MANUFACTURING PURVEYORS

Established 1847

ALIMENTARY PRODUCTS

ALL OF OUR PRODUCTIONS BEAR THIS TRADE MARK

WE WILL PROSECUTE ALL INFRINGEMENTS & IMITATIONS







CHOICE DESSERTS

OVER 100 DOMESTIC & FOREIGN FRUITS AND VEGETABLES TRANSMUTED INTO TABLE DELICACIES

PRICES ON PRESERVED FRUITS REDUCED 1ST DEC. 1885

PRESERVED, CANNED & BRANDY FRUITS, FRUIT JELLIES, VEGETABLES, TOMATO CATSUP, SYRUPS & JAMS, SALAD DRESSING, BLACKBERRY BRANDY, MINCE MEAT, PLUM PUDDING, SWEET PICKLES, OLIVES & CAPERS, WINE JELLIES, MARMALADE, SOUPS, SAUCES &c

SOLD BY THE LEADING GROCERS ON THE AMERICAN CONTINENT.

BOVININE, BUSH'S FLUID FOOD,

Is the ORIGINAL and ONLY preparation of RAW FOOD that does not become putrid and disgusting in a short time.

A MOST WONDERFUL NUTRIENT.

The vital principles of Beef and Mutton concentrated. A highly condensed Raw Food Extract. Acceptable to the most delicate taste and smell. Retained by delicate stomachs that reject all other foods. It assimilates more readily than any other food known to the medical profession. Bovinine under the microscope shows the blood corpuscles in their normal condition strongly marked, while in other foods or extracts this vitally important element is destroyed by the action of heat in cooking.

Containing 26.58 Per Cent. of Soluble Albuminoids,

According to OSCAR OLDBERG, Ph.D., Professor of Chemistry and Toxicology, and Dean of the North-Western College of Pharmacy.

A. L. LOOMIS, M. D., Professor in Medical Department of University of New York, says: "I prescribe Bush's Fluid Food or BOVININE, and prefer it to similar preparations."

J. S. JEWELL, M. D., Chicago, says of Bovinine: "I am delighted with it; it is what I have been looking for these twenty years, and it supplies a want that nothing else has been able to fill."

DRS. WARD and FRED. SMITH, speaking for themselves and their colleagues of the Hospital of St. Barnabas, Newark, say: "Bovinine was readily taken by the patients, was easily retained, and in many cases by stomachs which had rejected all other forms of nourishment. We believe Bovinine contains more nutriment, relative to the bulk, than any other preparation known to the medical profession."

"During the last four months of his sickness, the principal food of my father, General Grant, was Bovinine and Milk; and it was the use of this incomparable food alone that enabled him to finish the second volume of his personal memoirs.—FRED. D. GRANT."

October 1st, 1885.

Carefully prepared from the formula of the late James P. Bush, by the J. P. Bush Manufacturing Co., 44 Third Avenue, Chicago, Ill.

PUT UP IN 6 AND 12 OUNCE SIZES, AT 60c. AND $1.00 PER BOTTLE.

For Sale by all Druggists.

Principal Office, 2 BARCLAY STREET, NEW YORK CITY.

A VALUABLE BOOK FOR NOTHING.

The AMERICAN ANALYST will send to any person who will forward a New Subscription with One Dollar, a copy of

THE FAMILY CYCLOPÆDIA OF USEFUL KNOWLEDGE.



This is unquestionably one of the most interesting, entertaining and instructive books ever published. It is a universal educator for every member of the family circle, filled with useful information from beginning to end, and this information is given in such an attractive and pleasing way that the book is quite as entertaining as it is instructive. It treats of hundreds of subjects of which no man, woman or child who seeks to be well informed can afford to be ignorant, yet of which the masses of people are entirely unlearned. It contains the cream or substance of a dozen ordinary volumes, and is one of the most valuable and useful books a family can have in the house. No living man is so well informed that he may not learn from it. It is a book for the masses, for old and young, rich and poor, and will be read with pleasure and profit by all. It will likewise be found of great value as a work of reference. The book is profusely and elegantly illustrated, and is conveniently divided into departments, as follows: **Biography, History, Natural History, Travels, Manners and Customs, Etc.; The World Illustrated, Useful Arts and Manufactures, Trees, Plants, Fruits, Etc.; Great Inventions, Mining, Wonders of the Sea, Familiar Science, Law for the Masses, Statistical and Miscellaneous.** All the above subjects are fully and ably treated in this valuable book. It is a vast storehouse of useful and entertaining knowledge—unquestionably one of the best and most valuable books ever published in any land or language. No cyclopædia ever heretofore published at twice the cost is to be compared with this book in point of artistic make-up, beauty, and excellence of illustration, and quality of contents. As a holiday or birthday present for any one, nothing more appropriate or acceptable could possibly be selected. THE FAMILY CYCLOPÆDIA OF USEFUL KNOWLEDGE is a large and handsome book of 544 pages, 12mo, printed upon fine paper and elegantly bound in cloth, embellished with artistic designs in black and gold. It contains **Two Hundred and Seventy-three Beautiful Illustrations,** the original cost of which was over $5,000. The book will be sent by mail, post-paid, to any person sending a **New Subscription with One Dollar.** It is as large and handsomely gotten up as books usually sold at $1.50 and $2.00, and in the quality of its contents is worth a dozen ordinary volumes.

ADDRESS ANALYST PUBLISHING CO.,

19 PARK PLACE, NEW YORK.

QUINA-LAROCHE

A STIMULATING, RESTORATIVE AND ANTI-FEBRILE

VINOUS ELIXIR

OF THE THREE CINCHONA BARKS.

A most powerful restorative in all cases where Cinchona is indicated,

As MALARIA, EXHAUSTION, SLOW CONVALESCENCE, GENERAL DEBILITY, Etc.

LAROCHE'S QUINA possesses in the highest degree the restorative and invigorating qualities of Cinchona, which is the best known medicine for giving tone to the digestive organs. It succeeds completely in removing LANGUOR, WEAKNESS, WASTING DISEASES, WANT OF APPETITE, and for FEVER AND AGUE IT IS ONE OF THE BEST SPECIFICS.

FOR SALE BY ALL DRUGGISTS.

E. FOUGERA & CO.,

PARIS, 22 RUE DROUOT. Sole Agents for the United States.

AMERICAN ANALYST

FOR THE

FAMILY AND CONSUMER.

A SEMI-MONTHLY ADVOCATE OF PURE FOOD AND THE SUPPRESSION OF ADULTERATION.

Office, 19 Park Place.

[Entered at the Post Office at New York, as Second Class Matter.]

VOL. IV.—No. 7. NEW YORK, APRIL 1, 1888. Whole No. 79.

CONTENTS.

Adulterated Foods 138

Answers to Correspondents 134

A Wild Statement 133

Business Notes 140

Domestic Dietetics 137

Editorial 134

A New Departure—Glazed Crockery Again—A State Food Fair—Electricity for Street Cars.

Ice Pollution 135

Maple Sugar 136

Parson Jim 129

Personal Propinquity 135

Preservative Agents in Beer 136

Profits on Dressed Beef 132

Salicylic Acid 136

Some Every Day Suggestions. 135

Soap a Factor of Health 133

Wine. By F. E. Engelhardt, Ph.D. 138

PARSON JIM.

THE ROMANCE OF A COLORADO CAMP.

About twenty years ago, the stage station on the Denver and Colorado Springs road, known as the George Washington Gulch, became suddenly the scene of unexpected activity through the discovery there of a rich deposit of silver. The station grown into a town floated almost as by magic on a floodtide of wealth and prosperity. The discoverer of the silver vein who had combined the management of the lovely station with the sinecure position of postmaster, thereby securing for himself the title of "the Honorable" Samuel Green, found himself in a few month's time fully occupied with his official duties, besides which a double coach-service had to be put on the road, while Gulch passengers arrived or departed with every coach. Add to this the fact that the postmaster owned an interest in the richest claim in George Washington Gulch, and it will be readily understood that he had developed into an individual of considerable importance.

Still, if one had about that time quietly investigated among the strange characters who formed the curiously cosmopolitan population of that Colorado valley, with a view to learning who among their number was held in the highest esteem, the Honorable Samuel's name would scarcely have received mention. The parson was the favorite among "the boys;" and hardly a man but would gladly have given his last dollar, aye, or his life's blood, had anything so serious been necessary, to help the parson out of a tight place. Never let it be imagined for a moment that the parson of the Gulch was the orthodox pastor, in the habit of wearing broadcloth of clerical cut and white cravats. He wore a broad-brimmed hat, certainly, but it was of the approved cow-boy pattern; to a coat he was well-nigh a stranger, being content to appear in a heavy red woolen shirt; while for trousers he substituted the highly ornamented and picturesque buckskin breeches affected by Mexicans, Indians, and other denizens of the Far West. It is also certain that the title of Reverend had never been, verbally or in writing, prefixed to his name; and yet he knew, and the boys knew, that to be called "Parson Jim" was in itself a mark of distinction in a district where men were supposed to have no official titles or surnames, while Christian names were invariably reduced to monosyllables.

Parson Jim's record and capabilities were hardly such as would recommend him as a candidate for church-work in communities laying claim to advanced civilization. He could not read the Pentateuch in the original Hebrew, or discuss the Thirty-nine Articles; but he was a dead-shot with a revolver, and could gracefully ride the back of a bucking broncho. The Westminster Catechism was a sealed book to Parson Jim; but he could set a broken limb, raise a tent, or build a shanty with the next man. And because he was cool as ice when fiery blood coursed through the veins of other men—because he was brave as a lion—because he was gentle as a woman with sick men—because he had a big heart—because he spoke kindly words—and because nothing came amiss to Parson Jim, the rough specimens of humanity in George Washington Gulch loved and respected him as they never could have loved and respected a grave and learned Doctor of Divinity from the East.

Now, in a Western mining town it is a gross breach of etiquette to make inquiries as to a man's pedigree, or to attempt to learn more than he chooses to tell of his history prior to his arrival in the camp. So long as he is "square" and behaves himself, he is one of "the boys," and as such is bound to them by a sort of free-masonry. Hence, when Parson Jim came to the Gulch and announced himself as a preacher, the miners asked no questions. They did not take "much stock" in preaching, but they were disposed to give the newcomer a "show;" and when time passed, and Parson Jim proved to their satisfaction that he was made of the right "stuff," they not only tolerated him, but made him heartily welcome.

There was no church in the Gulch; there was no school-house; there was not even a hall of any kind. There was, however, a large frame shanty used for a whiskey saloon, named by its proprietor "The Rocky Mountain Sample Rooms." In the West, be it remembered, all the drinks are samples, no matter if the same consumer gets away with fifty glasses from the same barrel.

Parson Jim made his appearance in the Gulch during the winter immediately following the summer when the Honorable Samuel Green made his important discovery of the existence of silver in the valley. He arrived on a handsome roan mare, without bag or baggage, and made his quarters at the rude hotel connected with the Rocky Mountain Sample Rooms. During the evening, there was a scuffle in the large bar-room, and the newcomer looked in through one of the doors to see what was the trouble. A young and slender lad of perhaps nineteen or twenty years was struggling with a brutal-looking, muscular giant of twice his age. It was only a question of minutes when the big rough fellow would "down" his young opponent, and yet the dozen or so of onlookers made no attempt at interference. Just as the new arrival appeared on the scene, the younger combatant got in a nasty blow, which evidently hurt and irritated his opponent. Quick as lightning, the big fellow drew his bowie-knife and raised it, preparatory to plunging it into the lad.

"Hands off, you bully!" shouted the stranger in the doorway. The burly fighter glanced rapidly in the direction from whence these words came, but did not drop the hand which gripped the ugly knife.

"Drop that knife!" thundered the stranger, at the same time laying his hand upon his pistol-pocket.

The bully noticed the last-named action, and letting go the boy, yelled, with added oaths: "Curse you shut up! Who are you, anyhow?" The large man was evidently very angry. He held the knife in his left hand, and with his right drew a heavy revolver, which he proceeded to level at the stranger.

"Throw up your hands, quick!" shouted the latter. But the fellow did not hear this warning. Click! went the hammers of the pistols. It was a question of quarter-seconds now. Bang! went one revolver—the stranger's—and the big man fell—dead.

Then there was a momentary silence, followed by some queer ejaculations: "Dead as a Injin!"—"Sarved him right!"—"Stranger's a plucky 'un!"

"Be-ewtiful shot!"—"Who air you, stranger, anyhow?"

"Boys," said the new arrival, when at last he had a chance to speak, "this is a sort of business that I am not fond of. Sometimes it is necessary, though, as it was to-night. I am sorry; but let's say no more about it. I pay the funeral expenses and answer all questions.—You want to know who I am? "Well, I'm a preacher; and there'll be preaching in this room, with the landlord's permission, next Sunday morning at ten o'clock."

It was a strange introduction for a preacher, but it was perhaps the best one he could have had in that wild place. Anyway, the respect of those rough miners was lastingly secured, and from that time on he grew in favor as a man and a preacher.

In those old coach-days there was one serious drawback to travnelig between Denver and George Washington Gulch—the road was infested by a small but hitherto invincible band of desperadoes, under the leadership of a regular dare-devil known as "Kansas." This man Kansas had attacked and robbed the coaches

fifteen or eighteen times within six months; and though he had never been known to be accompanied by more than three confederates, his band was the terror of the stage drivers and their passengers. Once the proprietors of the stage line had organized a posse of armed men who scoured the country in search of Kansas and his crew; but the outlaw remained at large, and within a week lightened a coach of seven thousand dollars-worth of silver ingots.

Late in the evening of a summer day, when, with the exception of a party of gamblers at the "Sample Rooms," all the citizens of the Gulch were soundly sleeping, a solitary horseman rode up to the unpretentious shanty which did duty for a parsonage. It was nothing but a two-roomed hut, rudely constructed and roughly furnished. On this occasion the "parsonage" was in sole charge of Ah Wing, a "heathen Chinee," who acted as Parson Jim's cook and chambermaid. Ah Wing was himself perchance in some Chinaman's paradise, for his sleepy features, usually utterly void of expression, were illumined by a yellow smile. The parson was off, as he frequently was, on a trip down the valley, and the parsonage, being well removed from the main portion of the settlement, was seldom visited during his absence. The dreaming Celestial was therefore much surprised, and indeed frightened, when he was awakened from his slumber by a violent hammering at the barred door. He cautiously drew back the wooden bolt, and peered out into the warm, starlit night. Close to the door he beheld a stalwart man with long black hair and a heavy moustache, holding in one hand the bridle of a large horse, while on his left arm he carried a girl—evidently dead or in a fainting condition.

"Where is the parson?" asked the stranger in a firm but quiet voice.

"Parson Jim he go way muchee; he no come home till Slunday," replied the surprised Chinaman.

"Well, hold my horse, and hold him tight. This young woman is very sick, and I'm going to lay her on the parson's bed."

He entered the room, and tenderly laid his burden on the camp cot which Parson Jim used for a bed. Then he tore a fly-leaf from an old book which he saw lying around, and producing a short end of a pencil from his pocket, wrote hastily and somewhat clumsily a few words.

"See, here," he said to the Chinaman, as he stepped to the door; "give this piece of paper to the parson as soon as he returns. This young lady is hurt a little, and frightened a great deal, and she has fainted. Pretty soon she will come around. When she does, see that you take good care of her, you yellow-skinned white-livered duck! Perhaps you'll behave yourself all the better if I tell you my name is Kansas!"

The Chinaman perceptibly trembled as he heard the dreaded name, but said nothing, and the handsome stranger sprang to his horse and rode away.

Ah Wing quietly surveyed his new charge, and saw that she was a yellow-haired, fair-complexioned girl of perhaps fifteen or sixteen years, slender, and evidently unused to work of any kind. The Chinaman faithfully kept watch all night, and noticed that the girl passed gradually from her faint into an easy slumber.

It was six o'clock in the morning, and the girl was still sleeping, when Parson Jim returned. Ah Wing felt much relieved, and at once handed the note to his master. It was written in a rough, unknown hand, but this is what he managed to decipher:

PARSON—You are understood to be a pretty good fellow. This girl's father was accidentally shot this evening in a scuffle with the coach-people. She must be cared for; and I select you for the job. I know your record, and you are the only man in Colorado I would trust with an unprotected girl. I will see that you are supplied from time to time with money for her keep.—Be true to this trust, or look out for

KANSAS.

The parson twirled the paper in his fingers, shoved it into his hip-pocket, and then asked a few questions of Ah Wing.

"What kind of a fellow brought the girl here?"

"Muchee fine Melican man," replied the little Chinaman.

"Would you know him again if you saw him, Ah Wing?"

"Yes, siree; Ah Wing no fool."

Half an hour later, the fair young stranger opened her eyes, and the parson, in his homely but pleasant way, proceeded to make her feel at home.

"I am afraid, miss, that you have just passed through serious trouble; but try and feel that you are at least safe and among friends. You are welcome to all this poor house affords, and anything we can do for you shall be done."

But the girl burst into a flood of tears, and could speak no words but "Poor father—poor father!"

Later on, Parson Jim learned that she and her father were the only passengers on the preceding day from Denver, and that they were going through to Colorado Springs on their way to New Orleans. The coach was attacked by highwaymen, and as the girl's father, Mr. Winship, rather unwisely resisted them, he was shot dead. Then the girl had fainted, and remembered nothing until she found herself in Parson Jim's best room. Her name, she said, was Ethel Winship.

ASK YOUR GROCER FOR IT. USE NO OTHER.

IMPEROYAL Wheat, Buckwheat and Cereals.



BEST IN THE MARKET.

IMPEROYAL VACUUM COOKED OATS, WHEAT AND HOMINY

AND

Griddle Cake Flour.

M. D. STEVENS' IMPEROYAL NEW PROCESS REFINED FLOURS.

Require but one minute in preparation, without **Salt, Baking Powder or Yeast.**

18 MERCANTILE EXCHANGE,

NEW YORK.

DIRECTIONS ON EACH PACKAGE.

Can be used for all kinds of Pastry, Bread, Biscuit, Griddle Cakes, etc., and its absolute freedom from Alum, Terra Alba, or any injurious ingredient, make it a necessity in every household. No lady can afford to be without it.

SOLD BY FIRST-CLASS GROCERS.

MELLIN'S

TRADE MARK

FOOD FOR INFANTS & INVALIDS

The Only Perfect Substitute for Mother's Milk.

A Copy of our Book,

The Care and Feeding of Infants

will be MAILED FREE to any address.

DOLIBER, GOODALE & CO.,

40-41-42-43 Central Wharf, Boston, Mass.

WINTER DIET.

A nutritious Diet for infants during the winter. and spring months, has a very important bearing upon the ability of the little ones to withstand the strain of the heated term during the ensuing summer. NESTLE'S MILK FOOD, is noted for its nourishing properties and for producing firm flesh, hard bone, and tough muscle. Every prominent writer on infant's diet awards Nestle's food the first place. Each new compound put on the market in the past few years has either aimed at *imitating* Nestle's food or *attacking* it, thereby testifying to its superiority.

F. W. DEVOE & CO.,

ESTABLISHED 1852.

PURE MIXED PAINTS

WE desire to call attention of consumers to the fact that we guarantee our ready-mixed paints to be made only of pure linseed oil and the most permanent pigments. They are not "Chemical," "Rubber," "Patent," or "Fireproof." We use no secret or patent method in manufacturing them by which benzine and water are made to serve the purpose of pure linseed oil. Sample cards containing 50 desirable shades, sent on application.

Catalogues of our different departments to responsible parties.

FINE VARNISHES, WOOD FILLERS, WOOD STAINS.

Artist's Materials. Mathematical Instruments.

Cor. Fulton and William Sts., New York.

COFFIN, DEVOE & CO.,

179 RANDOLPH STREET, CHICAGO.

IMPORTANT

TO THE

MEDICAL PROFESSION.

Send your address to THE NEW YORK PHARMACEUTICAL COMPANY, BEDFORD SPRINGS, MASS., for Illustrative Hand-book, **FREE,** containing valuable formula, special directions, and the testimonials of one thousand physicians in favor of the great merits of

HAYDEN'S

Viburnum Compound,

IN FEMALE DISEASES.

Also, the

URIC SOLVENT,

For KIDNEY DISEASES, and complaints arising therefrom.

Putting the girl's story and the contents of the note together, it looked as though the desperate Kansas had killed the girl's father, and prompted by some feelings of remorse and pity, had undertaken to help the bereaved daughter.

A day or two later, when Ethel was somewhat rested and her grief less poignant, Parson Jim had another talk with her.

"What would you like to do?" he said.

"O sir, there is nothing for me to do. Get me work of some kind here in this place. We had no friends—father and I had lived and traveled together since my mother died, many years ago. We were getting poor, too, I know, and my father had some plans of his own, but what they were, I do not know. If you will help me to get a living here, I shall be much obliged, and I am willing to try anything."

"My poor child," said Parson Jim in his kindly voice, "I am truly sorry for you. If you can be content in my rough home for a while, stay here until we can manage something better for you. I have no one for whom I care, or who cares for me—only the boys in the camp. But those same boys will tell you that not a hair of your head will be hurt while you stay under my roof. I have plenty of this world's wealth—more than the boys imagine—and I can afford a slight addition to my family."

So she stayed, and found that Parson Jim's words were true. She could not have been treated more as a lady had she been an earl's daughter and the guest of a dowager-duchess. As the weeks passed, Parson Jim managed to add a couple of cute little rooms to the parsonage, one which was "my lady's chamber," and the other the "parlor." Then, too, pretty carpets and furniture came from Denver, and the boys began to think that the parson was putting on "lugs." But they excused a good deal in the parson, and really vied with one another in paying homage in their rough way to the parson's ward.

Of course they soon knew the story; and Parson Jim had shown the Honorable Samuel Green and one or two others the note that Kansas had left with Ethel Winship.

Months fled, and Ethel stayed on at the Gulch. She became contented, and much appreciated the parson's care and efforts to make her comfortable. She showed her gratitude in a hundred womanly ways, and kept the parsonage as neat and pretty as if it had been in Massachusetts or the English Midlands, instead of in a wild Colorado valley. Only, every time news came of a robbery or murder by Kansas and his gang, would the poor girl become agitated, and cry for vengeance on the man who took from her a dear father.

Three years slipped quickly away at George Washington Gulch. The robber had evidently not forgotten his promise to provide for the girl; for, at odd times, a packet of money had been found on the outside of the parson's window-sill, marked "From Kansas." It had always been placed there overnight, in a mysterious manner; for no one was ever seen to do it. Parson Jim himself still preached every Sunday in the Sample Rooms, and was still a prime favorite with the miners, though they sometimes wondered why a man who was evidently so well "fixed" as the parson should elect to stay in a rough, out-of-the-way place like the Gulch.

Ethel Winship had grown into a beautiful woman, and was good as she was pretty. Parson Jim perceived this. Parson Jim was in love with his ward.

One evening in the spring-time, he told Ethel of his love, and asked her to be his wife.

"I cannot answer that question, dear Jim," said the girl. "Myself is the only reward which I can offer to any man, because I have naught else. So I have long ago made up my mind to keep myself to offer, if needs be, as a reward to the man who shall kill or capture Kansas. If it were not for that firm resolve, I would say 'Yes' at once—for, Jim, you deserve my love and all I can give you. But do not ask me, dear. Perhaps Kansas will be captured, anyhow—and soon—by some one who will never think of reward. Then—well, don't think badly of me, Jim, dear; two things would make me a happy girl—vengeance on Kansas, and the right to call you my husband."

Parson Jim heard these words sadly enough, but he thought too much of Ethel, and he resolved not to seek hastily to turn her from her purpose even for his own benefit.

Early in the following summer, toward sunset, Ethel sat on the porch of the parsonage quite alone. The parson was away, and had been away all day and might not return until the following evening. One of the men from the Gulch approached and doffed his hat.

"Parson in, miss?"

"No, Zeke; he is away to-day."

"Well, I wuz jest a-goin' ter tell him that we've got news that Kansas is likely ter be up ter mischief 'way about ten miles along ther valley ter-night. It's the first time we e'er got a pointer as ter Kansas' tricks, an' some uv us thought as like enuff we might make up a little crowd to down his nobs. Parson's mostly game fer business that's right an' squar, so I kim up ter tell him."

Ethel's eyes flashed, and the warm blood coursed quickly through her veins, as a wild thought occurred to her. She could ride like an Indian, and she was a dead shot; Parson Jim had taken a special delight in making her a good horsewoman and clever with a pistol.

"I will go," she said. "I'm not going to ask if I may go; I'm going, Zeke."

The Standard of Excellence.

KINGSFORD'S

OSWEGO

Pure and Silver Gloss



STARCH

KINGSFORD'S

OSWEGO CORN STARCH

FOR

Puddings, Custards, Blanc-Mange, Etc.

THE PERFECTION OF QUALITY.

WILL PLEASE YOU EVERY TIME.

Always ask your Grocer for these goods.

COLDEN'S LIQUID BEEF TONIC.

ORIGINAL LABEL:
"Colden's Liebig's Liquid Extract of Beef and Tonic Invigorator."

AN INVALUABLE AID IN THE TREATMENT OF ALL CASES OF DEBILITY.

Established 15 Years. Endorsed by Scores of Physicians. Essentially Different from all other Beef Tonics. Beware of Imitations.

COLDEN'S LIQUID BEEF TONIC consists of the Extract of Beef (by Baron Liebig's process), spirit rendered non-injurious to the most delicate stomach by extraction of Fusel Oil, soluble Citrate of Iron, Cinchona, Gentian and simple aromatics. An official analysis of this preparation by the eminent chemist ARTHUR HILL HASSALL, M. D., F. R. S., and an endorsement by SIR ERASMUS WILSON, F. R. S., is printed on the label of each bottle.

Its Range of Action Embraces all Cases of Debility.

By the urgent request of several eminent members of the medical profession, I have added to each wineglassful of this preparation two grains of SOLUBLE CITRATE OF IRON, and which is designated on the label as "No. 1," while the same preparation, without Iron, is designated on the label as "No 2."

It acts directly on the sentient gastric nerves, stimulating the follicles to secretion and gives to weakened individuals that first pre-requisite to an improvement, an appetite.

☞ *I will, upon application, send a sample bottle of Colden's Liquid Beef Tonic to any physician in regular standing. Please ask your Dispensing Druggist (if he has not already a supply) to order it. In prescribing this preparation physicians should be particular to mention "COLDEN'S" viz: "EXT. CARNIS. FL. COMP. (COLDEN). It is put up in pint bottles and can be had of Wholesale and Retail Druggists generally throughout the United States.*

C. N. CRITTENTON, Sole Agent,

115 Fulton Street, N. Y.

"All right, miss; only it's risky work, an' not fit fer ladies. Mebbe ther parson wouldn't like fer yer ter go?"

"Yes, he would, Zeke—yes he would.—Don't you know—don't you remember all about my poor father? I *will* go; and if I get within range of Kansas, I will shoot him without mercy."

So Ethel joined the party of fifteen or twenty armed men who rode out that night for the purpose of capturing, if possible, Kansas and his desperadoes. They rode in as wide a line as the valley would permit, so that no company of horsemen might pass them unnoticed, and this plan proved a good one. About ten o'clock at night they espied four horsemen, evidently awaiting the coach, and closed in upon them. Zeke insisted on keeping Ethel Winship back, and made her promise to stay with him if the boys could effect a quick capture. But, no; the outlaws knew that certain death awaited them should they be captured, and resolved to fight dearly for their lives. There was a sharp, quick interchange of pistol-shots. Three of the robbers and three of their pursuers fell from their saddles. The fourth desperado put spurs to his horse and dashed right through the crowd of miners, who, in their surprise at his action, allowed him to pass. The desperate man emptied all the charges of his revolver behind him, as he galloped, threw the pistol down, and drew another from his belt. He rode in the direction of Ethel and Zeke, and they could see that he was a magnificent man, with long black hair and a black moustache.

"Kansas!" muttered Zeke.

Ethel no sooner heard that detested name, than she levelled a revolver at the man riding rapidly past. It required a steady arm and a sure eye to hit such a mark; but she did it. Click—bang—and a bullet lodged in the brain of the highwayman. A dozen men rode up and lifted the man. He was dead.

They laid him back on the ground, and one of the men, more curious than the rest, proceeded to examine the wound in his temple. To do so, he brushed back the long black hair, and discovered that it was false. Then he looked closely at the heavy moustache: that also was false; so he pulled both wig and moustache from the dead man. And as he did so, a long and piercing scream rent the air, and Ethel Winship threw herself upon the corpse of the highwayman.

"O my God! my poor Jim!—my poor Jim! I have murdered you!" And then she fainted.

"Parson Jim!" almost whispered a dozen men.

One of the slightly wounded ruffians who also stood near, between two of his captors, nodded his head and said: "Yes, Parson Jim. He fooled you boys badly. We call him Kansas!"

When they lifted the girl from the dead body of Parson Jim or Kansas—Ethel Winship's lover and the slayer of her father—she, too, was dead. Kansas was punished, and Ethel's father was avenged.

VARIATION IN MOUNTAIN HEIGHTS.—The Cordillera of the Andes has for some time been exhibiting a curious phenomenon. It results, from observations made upon the altitudes of the most important points, that their height is gradually diminishing. Quito, which in 1745 was 9,596 feet above the level of the sea, was only 8,570 feet in 1803, 9,567 in 1831, and scarcely 9,520 in 1867. The altitude of Quito has therefore diminished by 76 feet in the space of 122 years. Another peak, the Pichincha, has diminished by 218 feet during the same period, and its crater has descended 425 feet in the last 25 years. That of Antisana, has sunk 165 feet in 64 years.

EXPLOSIVE ICE.—A most unusual phonomenon, which occurred in the laboratory of the University of Virginia, has been described by Mr. Mallet, the professor of chemistry of that establishment. During a severe frost, ice was formed in the glass vesssl of a gazogene, the familiar apparatus for charging water with carbonic acid gas. The expansion of the ice burst the vessel, after which the ice itself exploded repeatedly, and threw off fragments, with a crackling sound. The effect is attributed to the pressure of the gas contained in the ice, which, in the case of water, would appear as simple effervescence.

BURNETT'S
PERFECTLY PURE
Standard — Flavoring
HIGHLY CONCENTRATED
EXTRACTS

THE superiority of these Extracts consists in their
PERFECT PURITY AND GREAT STRENGTH.

There is no subject which should more engross attention than the purity of the preparations which are used in flavoring the various compounds prepared for the human stomach.

They are not only true to their names, but are prepared from fruits of the best quality, and so highly concentrated that a small quantity only need be used.

JOSEPH BURNETT & CO., Boston, Mass.

PROFITS ON DRESSED BEEF.

THE CHICAGO DRESSED BEEF BUSINESS NOT A TRUST.

The latest issue of the *Dry Goods Chronicle* makes a charge against the dressed beef men of this city which cannot be substantiated. It alleges that they have combined for the purpose of beating down the prices of cattle, and have put into the hands of one man the buying of all the cattle that come into Chicago; that they pay an average of $25 dollars per head, and make a clear profit of $30 per animal. "Making the snug sum of $54,642,210 as divisible profits for these five concerns for the year 1887." The conclusion drawn is that consumers ought to be able to get their beef for less than half what they are now paying and then leave enormous profits for the combine.

It is morally certain that the profits of the business last year to the five firms handling 1,821,400 head of cattle in this city did not amount to ten per cent. of the sum named. It is probable that seven per cent. would be found to cover their entire profits on the business of dressed and canned beef in 1887. The *Chronicle* reasons from false premises, and it is not to be wondered at if the conclusions are false also. It figures that forty-eight pounds of porterhouse steak are cut from a steer that is bought for $25, while an animal that will yield so much of the cut named cannot be bought at the stock yards to-day for less than $50 by the combine or any other buyer. The statistics compiled at the close of the year in the office of the Secretary of the Union Stock Yards show that the average price of all the cattle received here during the twelve months, including good, bad and indifferent, was about $42 per head, and the average price placed on purchases for dressed beef purposes was $38 per head. The average price per pound, live weight, was estimated at 3¾ cents, instead of the less than 2⅛ cents allowed by the *Chronicle*. Here is the basis for an enormous error in the total. The rest may fairly be charged to the account of retail profits, without raising the question here as to whether or not those profits are larger than they ought to be. It is also untrue that the firms referred to do all their buying through one man or one house. It is a fact that each buys on its own account, though it is not unreasonable to suppose that they avoid as much as possible a bidding up of prices on each other.

The dressed-beef men are human beings and not angels. Undoubtedly they do the best they can in the direction of extending their business and obtaining a good profit thereupon. It is fair to presume that they buy the material as cheaply as possible, make the best use of it, get rebates on freight if they can, and have sometimes tried to crowd out others from competing with them in the sale of beef. But there is no good ground for charging upon them the enormities alleged by the *Chronicle*. The claim is simply preposterous, and could not be made by one having a moderate degree of acquaintance with the facts in the case. It is also too much to be believed, and so absurd as to defeat its intention. The allegation of a profit two or three times greater than the fact would have been much more likely to meet with general acceptance as coming within the range of the possible, if not the probable. So far as heard from the dressed beef business is not a "trust," and is neither open to the charge of employing trust methods nor of realizing trust profits on watered stock.—*Editorial in Chicago Tribune*, March 8, 1888.

THE FAMOUS CUSTOM MADE
PLYMOUTH ROCK $3 PANTS
Full Suits and Overcoats
at proportionate prices.



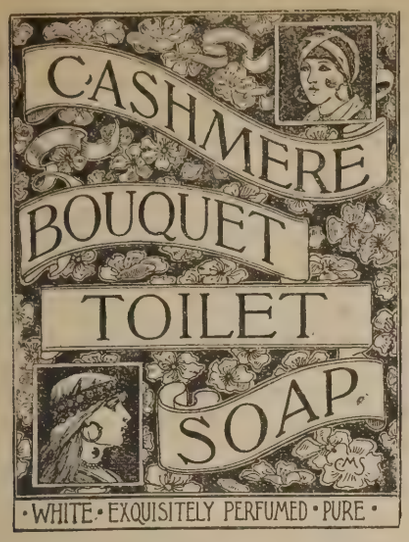
We sincerely believe that never before have we been able to offer our customers so good and stylish a line of **SPRING GOODS** as now. Our line of **Cheviot Suitings**, guaranteed absolutely all wool, is **particularly** remarkable. Our smooth-faced

DO YOU WEAR PANTS

goods also are very carefully selected to suit our trade, whose wants we know now from long experience. For 6 cents we mail you 20 samples of these cloths, self-measurement blanks so accurate that we guarantee a fit. Also **if you mention** this paper we send you a good 48-inch linen tape-measure. Or if you must save time, send us your **waist, inside leg, hip** and **knee** measures, together with $3, and 35c. to prepay express or postage. We guarantee the safe delivery. **For any cause** a customer of ours may return his goods and receive back his money or a new garment, a guarantee of which statement may be obtained by writing to the American Express Co. (capital $20 000 000), at Boston. **N. B.—In buying goods by mail, it is a good rule to send money only to concerns that are well known throughout the country and avoid the countless imitators that spring up for a day to compete** with old and regular establishments.

PLYMOUTH ROCK PANTS CO.,
18 Summer Street, Boston, Mass.

B. B. B.



SOAP.

ITS SIGNIFICANCE AS A FACTOR OF HEALTH.

The following is an abstract of a clinical lecture delivered at the Philadelphia Hospital for Diseases of the Skin, as reported in the *Medical Register:*

"There is a familiar old quotation which we have all had well scrubbed into us, and which runs to the effect that 'Cleanliness is next to Godliness.' Only those who come directly in contact with 'the great unwashed,' and physicians especially, realize how godlike an attribute is the absence of dirt. Soap is one of the most important factors of civilization. As some of our historians have put it, nations have escaped from barbarism with a persistence that may be measured in bars of soap. It seems, therefore, especially unfortunate that an agent which has wrought so much benefit to mankind should be subjected to serious abuse; that soap, in a word, should be subject to adulterations which react upon the health and comfort of mankind.

"The vast majority of people are quite ignorant as regards the proper constitution of good and pure soap. It is needless to say that there is a positive failure to appreciate the dangers incident to the use of an adulterated or poorly made soap. This is all the more surprising in view of the fact that a brilliant complexion, a soft and delicate skin, are so much admired, while a universal repugnance is felt for the loathsome skin diseases to which impure soaps may give rise. The common practice in choosing a soap is to select one on the basis of price, appearance, and perfume. This is altogether wrong. Economy in soap, like economy in drugs, is a poor policy. Appearance is no guide whatever. Gelatine, starch, talc, and other adulterative materials are often coupled with insoluble and injurious coloring matter to give the soap weight and an attractive appearance, but resulting in a harmful action upon the skin and its easily injured appendages. Perfumes, which are very agreeable to the sense, are frequently due to the presence of irritating oils and aromatics, which cannot be used without incurring dangerous risks. No person should venture to use a soap which has just been picked up by chance in a shop on the haphazard recommendation of a salesman. Before using any of these mysterious manufactures, something should be learned of their chemical constitution. A soap may be excellent so far as its cleansing properties are concerned, and yet be highly destructive to the epithelial tissues, in which it may set up an inflammation resulting in disease and disfigurement. Roughness of the skin and chapping of the hands are very general evils due to the use of impure soaps. There are also very many cutaneous affections aggravated or induced in this same way.

"A word about the mode in which soap is prepared may demonstrate how great the possibilities of adulteration are.

"Soap is made by a chemical reaction between a fat, or fixed oil, and a caustic alkali, resulting in the formation of an oleate and the substance known as glycerin. In the first place, then, we want a properly constituted oil or fat—not one in which there is extraneous organic matter present, threatening decomposition, and consequent 'rancidity,' by the development of free acid. Soaps made from such fats are necessarily irritating. The best agent now known is pure olive oil, which, under the action of a proper alkali, is transformed into a soluble oleate, the corrosive alkaline properties of the reagent being also dissipated at the same time. The quality of the alkali used must also be considered in the manufacture of good soap. Lime and other earthy bases are useless, as they form compounds insoluble in water. Potash and soda may both be used, but the potassium oleate (soap) is soft, while the sodium oleate (soap) is hard. These alkalies should not be contaminated by the presence of carbonates, or the earthy substances referred to, else the irritating effects will again be incurred. No mineral matters, such as are present in all mottled soaps, should enter into the composition of good soap; and, even granted that the chemical constituents are of the best quality, a certain amount of skill is necessary to combine them with the best results. If the elements of soap are not in nice and exact proportions, an excess of caustic alkali or an unpleasant, oily residue, will be present. The object is to secure a compound that will cleanse the skin without disintegrating it, or checking its healthy action, by a stoppage of the pores. It is, therefore, manifest that the chemical qualities of soap should be established before it is used."

The AMERICAN ANALYST has from time to time published analyses of different soaps as bought in the open market, which will enable the reader to judge how closely to the standard, as set by Professor Shoemaker, these various soaps have come. We shall continue these analyses for the further enlightenment of our readers.

A WILD STATEMENT.

(*From the Crockery and Glass Journal, Feb.* 20, 1888.)

We boldly assert that all American china and glazed crockery ware is enameled with a preparation consisting largely of the *red oxide of lead*, or, as it is commonly known, *litharge*. This *salt* of lead is very soluble in the fat acids, especially in butyric acid. All fatty foods contain this acid, and when from the frequent alternate expansion and contraction of the enamel or glazing on the various dishes and plates we use on the tables cracks have formed, *the butyric acid insinuates* itself under the enamel, takes up the lead, and with the food on the plate is taken into the stomach, where being a cumulative poison, it insidiously poisons the system. Do not let us deceive ourselves by thinking that the quantity of the lead is small, but remember that the quantity of lead set free by carbolic acid in the water running through a lead pipe is still less, and yet no less authority than Professor Chandler has proven that much lead poisoning is due to this.—*American Analyst.*

We do not want to be harsh with you, Mr. Analyst, but your bold assertion is one you will find very hard to prove. The same assertion analyzed by methods superior to your own reveals little or nothing regarding the processes by which the earthenware for domestic use is glazed, in this or *any other country*. With equal boldness we assert that you have never seen a single piece of English or American earthenware of modern manufacture the glaze of which consisted largely of red lead or that *had ever been dissolved by fatty acids*. As a matter of fact, we have never seen *red lead* used in any pottery in this country excepting one, and in that single instance the quantity was limited to an extent entirely compatible with the best results of glazing earthenware for household use.

The manufacturers of this particular class of goods both in this country and England use a comparatively small proportion of the white carbonate of lead in their glazes to facilitate the formation of a glassy surface by fluxing the refractory silicates which are really the largest components of modern earthenware glazes.

Lead, as a solvent of the silicates in making glazes for the finer grades of white earthenware, has been largely superseded by the use of boracic acid, which is superior in every respect to either the oxide or carbonate of lead as a fluxing agent in the preparation of the glossy compound applied to the surface of the dishes used on our tables. The amount of lead present in the glazes of such goods as we have designated earthenware is not sufficient to induce disintegration of the surface by the presence of any form of acid excepting fluoric, and it is rank nonsense to assert that the natural acids of cooked foods can have any effect whatever on the surfaces of any table goods made under the present system of glazing. To be susceptible to the dissolving influence of fat acids the glaze compound must contain *an amount of lead largely in excess of the silicates*, and even then the contact of the acid with the glaze must be continued unbroken for a considerable period of time. If any *sensible* person will take into consideration the small quantity of lead used in proportion to the flint, spar and boracic acid employed by all potters of the present day, and the brief time in which foods come in contact with the surfaces so composed, they will readily see that it is quite improbable that any effect can be produced by the presence of fat acids.

The amusing part of Mr. Analyst's statement is that "crazing" of the glaze must occur before the death-dealing poison can be eliminated. From this it appears that it is only necessary for the fat acids to pass through the cracks in the glaze and get around on the under side of it to set free the insidious poison, as if the side next to the body of the piece contained all the lead in the glaze. In this connection it is rather singular that we have never heard anything of the dire effects of using fine lead glass, and yet we will venture the opinion that the proportion of lead used in the finest glassware is largely in excess of that used in making pottery glazes. In fact, we are sure of it; just as certain as we know that olive oil kept for weeks and months in a fine lead glass cruet will have no more effect on the glass or the glass on the oil than it has in the case of the oil being confined for years in the lime glass bottles in which it comes to us. It will take an extremely fine analysis of the effects of any kind of oils or fats on lead glass bottles to convince a thinking mind that there is any dangerous compounding of the two elements, butyric acid and the lead in glass, and the strongest kind of practical evidence will be necessary to make us believe that any similar affinity can exist between such acids and the glazes of earthenware as it is made to-day, no matter whether it be American, English, or the production of any other country where potting is conducted on the system as now practiced in both of the countries named.

This is not the first time that this silly statement has been made by impractical and theoretical alarmists, but it is so long since we have seen it in print that we had come to the conclusion that a broader knowledge of the pottery business had pigeon-holed it forever. It seems, however, that the same old rot must beak out periodically, and that those who profess to be the teachers of the ignorant and unwise must say something silly to maintain the profundity of their utterances.

HOW PETROLEUM WAS FORMED.—The theory is held by Frof. Mendeleef, of Russia, that petroleum is produced by water which penetrates the earth's crust and comes in contact with the glowing carbides of metals, especially of iron. The water is decomposed into its constituent gases, the oxygen uniting with the iron, while the hydrogen takes up the carbon and ascends to a higher region, where part of it is condensed into mineral oil, and part remains as natural gas, to escape wherever and whenever it can find an outlet. If this assumption is correct, and a sufficient store of metallic carbides is contained in the earth's interior, petroleum may continue to be formed almost indefinitely and continue to yield a supply of fuel long after the supply of coal has become exhausted. Prof. Mendeleef supports his views by producing artificial petroleum in a manner similar to that by which he believes the natural product is made.

A NEW MILITARY RATION.—All the garrisons within the limit of the Seventh German Army Corps have now been provided with larger samples of the new article of food which is in future to form the so-called "iron ration" of the men in the field. It is a peculiar kind of bread, in the shape of small cubes the size of a chocolate drop, made of fine wheat bread, strongly spiced, and calculated to keep for a long time. When taken into the mouth it quickly softens, and is both palatable and nutritious. It is chiefly intended for forced marches, when there is no time for camping and cooking.

TOILET VINEGAR.—Oils of lavender, rosemary, juniper, peppermint, cinnamon, of each four ounces; oil of lemon, oil of cloves, of each eight minims; alcohol, three fluid ounces; pure acetic acid, four fluid ounces; water, q. s., to make sixteen fluid ounces. Dissolve the oils in the alcohol, add the acetic acid, and then enough water to make sixteen fluid ounces in all. Set the turbid mixture aside for a few days, occasionally shaking it up, and afterwards filter through a good filter paper.

American Analyst,

Published on the 1st and 15th of each month.

Subscription, - - - - - - $1 per year.
Single Copies, - - - - - - 5 cents.
Subscriptions to foreign countries, - $1.50.

Remit by Express Money Order, Draft, P. O. Order, or Registered Letter.

Advertising rates on application.

EUROPEAN AGENCIES.

On file at "American Exchange," 449 Strand, London; and American Exchange," 35 Boulevard Des Capucines, Paris.

THE ANALYST PUBLISHING CO.,
Publishers.

H. LASSING, M. D., } *Editors.*
T. P. McELRATH, }

No. 19 Park Place, ... New York.

NEW YORK, APRIL 1, 1888.

ANSWERS TO CORRESPONDENTS.

EMMA.—"H-O" is a novel way an ingenious advertiser has taken to call attention to his oats.

QUERY.—Grease may sometimes be removed from silk by applying magnesia to the wrong side.

COAL OIL.—Boil your lamp burner in a strong solution of washing soda in an old tomato can.

RUBY.—The fibre of wool is such that wringing is sure to shrink woolen goods. Rather hang them up with the water unwrung.

HOUSEKEEPER.—The cause of your sink stopping up is that grease in soap and dishwater is not as soluble in cold water as in hot water. By pouring down a hot solution of potash or caustic soda you can remedy the trouble.

A CONSTANT READER.—There is no "safe and sure depilatory," in the sense of any local application; for what will chemically destroy the hair, will injure the skin. There are scientific methods of removing hair, which in the hands of experienced, skillful operators are safe.

A NEW DEPARTURE.

In the next number of the AMERICAN ANALYST will begin a serial story, entitled "Helen's Escape," a stirring and well written tale of love and adventure in connection with the exciting period of the Paris Commune in 1871. It will run through four issues of the paper and will be found replete with interest from beginning to end. The rapidly increasing acceptance of the AMERICAN ANALYST as a family and household companion has impelled the management to supplement its several departments of domestic science with an additional feature of domestic interest of a more peculiarly literary character. This new characteristic, while it will not in any manner supplant or interfere with the technical features which have made the AMERICAN ANALYST so valuable a medium of relationship between the manufacturer and the consumer, will be conducted with the utmost care with a view to imparting to the paper the highest attainable quality of literary excellence. Short stories and serial tales by popular writers, and papers on current issues of the day, will hereafter appear regularly in our columns, our purpose being to combine intellectual gratification with popular instruction and to suit all the varied tastes of our host of readers.

GLAZED CROCKERY AGAIN.

In the accomplishment of our important mission it is constantly our duty to call the attention of consumers to the various dangers which beset them. It is also not unfrequently our privilege to tread—and by no means lightly—upon certain susceptible and very painful corns which obstruct our passage. This being the case, we are as much accustomed to the censure of the exposed as to the approval of the protected, and are neither surprised nor taken aback by the late onslaught of the *Crockery and Glass Journal*. When Bombastes indited his famous distich, relative to confronting face to face whoever should his boots displace, he never for one moment supposed that any one in his vicinity would venture to meddle with his bluchers; and by the same token we may assume that the editor of our contemporary, when he wrote his article of the 20th of February, was under the impression that we should either be frightened by his bluster or silenced by his philosophy. He cannot have seriously believed that we should "take up his gage," or he would have hesitated ere he rushed into print with such an exhibition of ignorance and weakness, nor should we stoop to do so, were it not necessary that he should learn—as so many others have learned—that when the AMERICAN ANALYST makes a charge, that charge can ever be maintained by figures, and borne out by scientific facts. As most readers will remember, we lately took occasion to remark that, when owing to various causes, the enamel or glaze upon our ordinary plates and dishes has become cracked, the fatty or oily portions of our food insinuate themselves beneath these cracks and there remain until, by decomposition, they have been split up into butyric and other free and corrosive acids. We explained that these acids, so set free, attacked the lead which these crockery glazes contain and transformed it from insoluble into soluble compounds, and that these soluble compounds of lead were thus finally introduced into our stomachs with portions of our food! The editor of the *Crockery and Glass Journal* addresses himself to the repudiation of this charge, and, neglecting his adjectives, we shall best economize space, by recapitulating his denials in the following short order:

First.—He denies that *red lead* and *litharge* are ever used in the glazing of crockery destined for domestic use in this or any other country—*and avers that only white lead is employed!*

Second.—He denies that the lead—whatever be its state of chemical combination—is susceptible to the influence of the fatty acids, *unless it be largely in excess of the silicates* (?)

The initiated mind, it is needless to say, will at once perceive that our critic is no more of a chemist than of a potter, and we shall doubtless be approved, if we endeavor—instead of reconsigning him to his obscurity—to give him some points connected with his profession. At the outset, then, we would inform him that the use of white lead, or basic carbonate of lead, in lieu of either red lead or litharge, is simply a question of convenience, or of prejudice, or taste. In the case of the two latter the difficulty is to obtain them sufficiently free from metallic or unoxidized particles, and this difficulty can only be overcome by frequent washings; while in the case of the basic or hydro-carbonates, they not only generally contain very undesirable impurities, but are besides, deficient in rapid fluxing qualities. This being the case, to quibble over what particular compound of lead is actually used is puerile, not only as regards the issue we have raised, but in virtue of pure chemical laws. Every student of chemistry is aware that white lead, when melted with the other ingredients of a glaze, undergoes a series of transformations, first into litharge and thence into silicates. These silicates of lead, being soluble, are again changed into litharge immediately they are dissolved, and this, were it to be absorbed into the system, would finally resume its original form of white lead in the stomach. When the editor of the *Crockery and Glass Journal* propounds that, in order to work any mischief, "the lead must be largely in excess of the silicates," we feel, like Gil-Blas, "that we must laugh, lest we be compelled to cry." Surely he should know better than this! Surely he does not ignore that the lead can only be present as the *base of a silicate*, and that, if ever, by any chance, its oxide is changed by a reducing flame (as we have sometimes known it to be), the metal at once becomes visible, as such, in the ware.

Again, he says—but he cannot be serious—that the amount of lead is so small as to obviate the probability of any ill-effect from its decomposition by fatty acids. The fact is, that, speaking sanitarily, it is not upon the relative quantity, but upon the *solubility of the lead silicates* that danger or safety depend, and this we will make clear to him, if he will follow us attentively. The glazes of stone china consist, chemically speaking, of mixtures of silicates, or of silicates and borates, the acidity of which may be said to stand in the ratio of 3:1. Of these silicates, orthoclase and albite dissolve only in hydrofluoric acid, whereas the less siliceous feldspars, being of smaller acidity, are soluble in all other strong acids. The trisilicates of lime and magnesia are nearly insoluble; those of the alkalies and of lead are very soluble; while the triborates are more soluble still. Upon analysis, the acid and basic constituents of a good stone china glaze—or rather such as would pass for good—will always be found to obtain in about the oxygen ratio of 3:1. Thus, for example, the components represent differing quantities of the following:

$$\left.\begin{matrix} Na\,(K)_2 + 1\tfrac{1}{2}\,Si\,O_2 \\ Al_2\,O_3 + 4\tfrac{1}{2}\,Si\,O_2 \end{matrix}\right\} = \text{Orthoclase or albite, or } \textit{double} \text{ trisilicate of alumina and alkalies.}$$

$$Ca\,(Mg)\,O + 1\tfrac{1}{2}\,Si\,O_2 = \text{Trisilicate of lime or magnesia.}$$

$$Na_2\,(K)_2\,O + 1\tfrac{1}{2}\,Si\,O_2 = \text{Trisilicate of the alkalies.}$$

$$Pb\,O + 1\tfrac{1}{2}\,Si\,O_2 = \text{Trisilicate of lead.}$$

$$Ca\,(Mg)\,O + BO_2\,O_3 = \text{Triborate of lime and magnesia.}$$

$$Na_2\,(K)_2\,O + Bo_2\,O_3 = \text{Triborate of the alkalies.}$$

If the basicity is increased, the acidity is reduced, and the solubility of each individual compound is correspondingly augmented. If, on the other hand, there are more of acid components, it is true that the solubility is diminished, but if this higher acidity be sought through silica, the glazes will not melt or "flow" in the stone china glaze fire, while, if it be sought through the use of a large percentage of boracic acid, they will *craze* rapidly even when cooling in the kiln. It is generally allowed from a hygienic standpoint, therefore, that the best glazes are those made from feldspar, borax and clay; but it is unfortunately equally generally claimed that these glazes are extremely expensive, both at first cost but in their application, and that they have the additional disadvantage of being more susceptible than the lead glazes, to the variations and irregularities of firing. Hence the preference for lead by manufacturers! Can we suppose that the German potters voluntarily petitioned their government to interdict the use of lead glazes? Does the editor of the *Crockery and Glass Journal* think so?

If the statements in our last article were *amusing* they were nevertheless true, and we have endeavored to afford some compensation for their unwelcome character, by rendering those of this one more fully *instructive*.

When the analyses which are now being made have been completed, we shall return to this interesting subject, meanwhile we will close with a few comments upon *glass*, a subject of which, if that were possible, our critic appears to be still more ignorant than of crockery. The temperature at which glass is boiled, is higher than that at which stone china is burned. Hence, *all lead glass* for table ware has a much greater acidity, and hence it is much less soluble than stone china glazes.

As an illustration, let us take the composition of so-called "half-crystal" as being

Silica	65.50
Lead oxide	16.
Lime	9.10
Sodium oxide	9.40
	100.00

Here the oxygen ratio is nearly 5½ : 1, and hence the sixteen per cent. of litharge is less liable to cause corrosion of the glass than would be two or three per cent. of the same compound in a stone china glaze.

A STATE FOOD FAIR.

The dealers and manufacturers of food products in the State of New York have been discussing for some time the expediency of giving an exhibition of their commodities. The project has at length been definitely adopted and the city of Albany will be the scene of the exhibition from the 10th to the 15th of September, inclusive. The display will be located in the Albany fair grounds, situated on a line of railway and easy of access by steam and horse cars, boat and carriage drive from the two cities of Troy and Albany. The exhibition will probably be opened by the President and Governor. An immense trade demonstration will take place in Albany the opening day, and a sort of general holiday will be observed. Each day there will be attractions furnished, such as horse races, tugs of war, base ball games, etc. The exhibit itself, including as it will every known article of food and drink, will be one of the most unique and attractive ever held in this country. Manufacturers from all over the country have applied for space and will try to excel each other in point of exhibit. A press headquarters will be established and exhibitors may meet the newspaper men in a place especially provided. The United and Associated press and special correspondents will be furnished with every facility for the transmission of news, and all information will be easily obtained. Every courtesy possible will be extended. Retail merchants' associations from every city in the State, and in some cases out of it, have signified their intention of forming excursions and coming in a body to the exhibition. To such organizations all o the railroads have decided to sell cheap excursion tickets. The railroads have also decided to charge exhibition freight rates for only one way in the transmission of goods.

ELECTRICITY FOR STREET CARS.

The application of electricity as the motive power for street cars is about to receive a thorough test in this city. We learn from the *Electrical Review* that the Julien Electric Storage Company has entered into a contract to furnish the Fourth Avenue horse car railroad with ten cars to be run by the Julien storage battery. The engine and dynamos for charging the ten cars now under contract are being put into the stables at Madison Avenue and Eighty-sixth Street, and the Julien Company expects to have the cars running by the second week in May. They are now well under way, and are expected to be finer than any horse cars yet made. They will be 18 feet long as against 16 feet for the ordinary horse cars, and each seat will be divided off as in the elevated road. The cars will be lighted by electricity. If the first ten cars do their work satisfactorily, the whole road will be fitted up with electric motors next winter.

No Oxygen in the Sun.—Professors Trowbridge and Hutchins, of Harvard College, report that their extensive and careful researches tend to disprove that oxygen exists in any part of the sun.

Magnetic Chicks.—Some experiments have been placed on record, says the London *Electrician*, in which a number of eggs were hatched out in a magnetic field, with the result that the chickens were all more or less deformed—blind, deaf or lame.

SOME EVERY DAY SUGGESTIONS.

THE RISKS OF PERSONAL PROPINQUITY.

While the interdependence of the numerous elements that constitute modern society is one of the prime necessities entailed by a high civilzation, it presents problems of the gravest importance to the student, the philanthropist and the law giver. It was well said by Dr. James B. Russell, of Glasgow: "Nothing is more conspicuous than the helplessness of the individual under the conditions of civilized life to secure the physical basis of health. What can one man wedged up in a crowd do to get fresh air, pure water, more standing room or to avoid his neighbor's disease?"

Dr. Charles F. Chandler, the great chemist, used even stronger language when he said: "The sanitary condition of a metropolis is to be determined from the status of the slums and never from that of its palaces. The health of Fifth Avenue is largely a function of the Five Points. In the struggle for physical and social well-being in the great cities, the most important duty on the part of its rulers is to look after and supervise the habits and conditions of its lowest and most worthless factors."

This interdependence appears in every direction. A fire in a disreputable groggery may swell into a conflagration such as nearly destroyed Boston and Chicago. A blizzard which cuts off the connection between the city and the country creates immediate suffering and distress. The vermin bred in filthy tenements and cheap lodging houses are carried to every dwelling, no matter how exquisitely clean or zealously guarded. The rat introduced into this city in the beginning of this century now infests every cellar from Castle Garden to the Harlem. With disease the case is even worse. A single case of Asiatic cholera or yellow fever in the dives will transmit the deadly germs to every district of the municipality. Given one person in a community attacked by communicable disease, and the one tends to become two, the two to become four; or it may be the one tends to become three, the three to become nine, and so on. In all cases you have a tendency to geometrical progression, but the ratio will vary according to the intensity of the tendency in the special disease. This tendency carries the disease from its centre of origin, as the prairie fire licks up the blade of grass and leaps from tree to tree with an ever widening front. Every sick person is a menace to those who are well. With the increase in population the pressure increases in larger ratio. The city of a million population seldom is ten times, nor even five times as large as the one with but a hundred thousand. It compels ten to live where one lived before. The last report of the local Board of Health shows that at least three districts in New York City are more densely populated than any other known place upon the globe.

No one who examines these facts can but conclude that physical propinquity creates obligations and rights which though recognized in moral philosophy, have never as yet been embodied in either the common law or the legislation of the United States. The neglect of these obligations and rights is ever and again punished in the severest way.

Dr. Alison has related a story of a poor Irish widow, whose husband died of typhus in one of the lanes of Edinburgh, and who wandered about the town with her three children, seeking help, and finding none returned to her lane and died there, and gave rise to a local epidemic which ended in the death of seventeen other persons. Carlyle says of this: "Very curious. The forlorn Irish widow applies to her fellow creatures, as if saying, 'Behold, I am sinking, bare of help; ye must help me! I am your sister, bone of your bone, one God made us; ye must help me.' They answer 'No, impossible; thou art no sister of ours.' But she proves her sisterhood; her typhus fever *kills* them; they actually were her brothers, though denying it! Had human creature ever to go lower for a proof?"

While political economists may differ as to the advisability of increasing the paternal functions of government proper, there can be no question as to the wisdom of increasing the power and jurisdiction of Boards of Health so as to meet the new difficulties and new troubles of modern life. Any and every citizen who commits acts tending to injure the public health or who omits to perform acts necessary to its preservation, should be proceeded against by the public officials with even more vigor and promptness than are meted out to the poor devil who steals a loaf of bread. Many thinkers go much further. A distinguished English physician and author says:

"What am I to do with my dirty neighbor? We must bring to the solution of it a little common sense and ordinary business principles as well as philosophy. The first thing to be done is to make him a voting unit in some convenient area of local government. * * * * The local administration must, of course, have parallel power of prosecuting and punishing the dirty neighbor for overcrowding and other nuisances which affect the well-being of the neighborhood. The principle to be strictly followed both in the case of the personal and local administrative unit must be not to do anything for them, but make them do it for themselves, and bear the expense as they will reap the benefits. In this way, a constant process of education would be carried on, and a sense of personal and local responsibility be maintained. Besides, every means of directly educating the dirty neighbor should be adopted. Let his children be taught in wholesome schools, where personal cleanliness and decency should be enforced during school hours; and let them have lessons in the rudimentary facts of hygiene, and the relation of disease to pauperism, crime and taxation.

"As a mere matter of business all this requires official administrative machinery. Every business man knows that if you really wish any function implying co-operation to be properly performed, there must be executive machinery, departmental subdivision, and general supreme supervision and co-ordination."

The views herein expressed apply as well to New York and elsewhere as to London. Ere long their importance will be perceived by these complacent citizens who, because their own home is healthful and happy, fancy all other homes to be the same, and who realize only when fire, disease, suffering and death cross the threshold, that they are insignificant units in a family whose member is the population of the city itself.

ICE POLLUTION.

THE MASSACHUSETTS BOARD OF HEALTH INQUIRING INTO THE SUBJECT.

The question of impure ice is attracting attention in all our large cities. The views entertained of its significance in Boston are expressed in the following extract from the *Boston Herald* of March 9th:

The State Board of Health has been collecting samples of ice for the purpose of testing their purity and protecting consumers from the dangers that are now pretty well known to arise from the use of such ice as is taken from ponds of polluted water. The city board of health, which has a good deal to do every year with illness arising from the use of bad water, has been looking up evidence of the fact that ice does not purify water which is contaminated with animal and vegetable matter. Every year the board of health has to account for a large amount of typhoid fever in this city, and it has become pretty well satisfied that the cases occurring in the autumn of each year are not the result of defects in the sanitary condition of the city, but, instead, from the effects of using bad water, and from the results of bad systems of drainage, or no drainage at all, in places where Boston people spend their summers. For this reason it will be well for Boston people to look into the

matters referred to, so that there will be less danger of them suffering dearly for their summer outings after they return to their winter residences.

The fact the board would like to impress upon the people who are already looking for summer homes is that it is very important that the places selected should have proper drainage and pure water supply.

The matter of using ice is one which people are not likely to think anything about unless there is something like an epidemic to call their attention to it. It is not generally understood how important a matter this is. Some don't even believe that any ice can be impure. But there is good evidence in the hands of the boards of health that congealing water does not purify it. Some recognition of this fact has been taken by several States, and it is provided in Massachusetts that there can be no driving of horses on ponds used for water supply, and if 25 consumers of ice petition the State board of health that it is their belief that the ice they are using is impure, the board can, after a hearing, apply to the superior court, whether it is in or out of session, for an injunction to prevent the further use of the ice. There are places where ponds are made during the summer months for the collection of surface water, so that a yield of ice may be got from it in the winter to supply the market the following summer. Such ice is pretty sure to be contaminated, the water thus collected being affected by sewage. In looking up the matter the board of health has come upon a valuable report made by a physician who attended a number of persons who were taken mysteriously ill at a large summer hotel at Rye Beach, and it has placed beside this report the observations of Dr. Thomas F. Rochester of Buffalo, N. Y., who, as far back as 1872, became satisfied that a source of typhoid fever existed which was little dreamed of, and which at first thought would seem almost impossible. Some one before remarked, without truly appreciating the truism, that ice often conceals what it does not kill, and Dr. Rochester lays down as his first principle that the poison in water is not destroyed or impaired by freezing. Then the question to consider is, Whence comes the ice supply? Often, he asserts, from shallow reservoirs, in the midst or neighborhood of large towns, purposely made to receive surface drainage from all around, under the erroneous idea that no harm will ensue, as freezing is supposed to purify and render harmless what might otherwise be objectionable. Great quantities of ice are taken from streams that are either the natural or artificial recipients of surface drainage, of the outpourings of sewers and of uncleanliness from various sources. The danger of ice taken from improper places is not only from that which is drunk, but from also its use in refrigerators and preservatories where milk, butter, fruits, vegetables and meats are subjected to its saturating influence as it evaporizes. Several instances of this danger came under the observation of Dr. Rochester, where the disease, by the most careful inquiry and investigation, could not be traced to any other source. The theory has been advanced by English specialists that the poison never originates *de novo*, but proceeds from a special and specific poison, which is capable of diffusion to a great extent, and which preserves its noxious qualities for a long time, even if buried for many months. This opinion the Buffalo physician does not concur in. The Rye Beach trouble was ably reported upon by Dr. A. H. Nichols of this city. He was engaged by the proprietors of the hotel, who were, of course, suffering pecuniarily from the trouble, to investigate it thoroughly. The disorder in question may be comprehended under the general term disturbance of the digestive system, characterized by a sensation of giddiness and nausea, vomiting, diarrhœa, severe abdominal pains, all of which was accompanied by fever, loss of appetite, continued indigestion and mental depression. The epidemic, though confined to so limited boundaries, baffled for a considerable time all efforts to trace the trouble to any specific cause. At first the drinking water was suspected, but that was drawn from wells at a safe distance from all drains and contaminations. It was also ascertained that some of the persons affected, having apprehended trouble from some such source, had used some other beverage. They had not hesitated, however, to use ice, either melted or otherwise. Suspicion at length rested upon the supply of ice furnished the house. A large portion of the ice furnished the town was found to be gathered from shallow ponds, formed during the winter by the flooding of meadows, and it therefore contained, as a rule, more or less grass and old vegetable matter, being, consequently, far less transparent than the ice supplied in Boston. The ice in this case was found to contain numerous foreign substances, varying in size, and apparently of vegetable origin, and the blocks were opaque. By questioning residents of the place, it was found that, during the winter, one had taken home some of the ice for the purpose of testing it, to find out whether it was fit to use, and, having eaten some of it, was made violently ill. Others had noticed a disagreeable odor arising from it. Two gentlemen who had taken some of it on a fishing excursion were made ill by using it, and in the room in which the ice was stored for the hotel there was a very bad smell. When the water from the melted ice was poured into a glass in the sunlight there was seen to be a discoloration, and it was charged with suspended matter. The pond itself was then examined, and was found to be stagnant, while down at one end of it there was a homogeneous mass of putrescent matter, composed of marsh mud and decomposing sawdust. When stirred the water near this place emitted an intolerably offensive odor. At houses near by it was found that in the summer time the windows had to be closed when the water was in any way disturbed, on account of the smell it gave off. Prof. W. R. Nichols, who is an expert on water analysis, was asked to examine samples of the water, and reported that it contained in suspension a considerable quantity of vegetable matter more or less decayed, and possessed a slightly disagreeable odor which became more noticeable as the water was warmed. Of the organic matter, some was so heavy as to settle down at once into the bottom of the vessel into which it was poured, but the lighter material remained for an indefinite time diffused through the water and would be drunk by any one using the ice in the ordinary way. Prof. Nichols thought that it was quite reasonable to suppose that the ice had been the cause of the sickness. Coincident with the disuse of ice at the hotel the guests began to get well, and there was no further sickness. Ice taken from a cart of the Boston Ice Company was analyzed beside that taken from Rye Beach, and the result showed that, while the organic and volatile matter was 0.31 in the Boston ice, it was 5.72 in the Rye Beach ice; and, while the chlorine was 0.02 in the Boston ice, it was 3.23 in that from Rye Beach. Dr. Nichols is constrained to say that great responsibility devolves upon those who undertake to provide food and drink for large numbers of individuals, and to such this experience inculcates the importance of giving special attention to the purity of drinking water, and guarding against every possible source of contamination. The notion that ice purifies itself by the process of freezing is not based upon trustworthy scientific observation. On the contrary, it is utterly wrong in principle to take ice for consumption from any pond the water of which is so fouled that it is unfit for drinking purposes.

Prof. Raphael Pumpelly, who made investigation for the national board of health, states that he has no doubt that ice can carry any disease that the water from which it is frozen, can convey, in so far as such diseases arise from the germs of low vegetable organisms. Ice, he says, does not destroy or free itself from these organisms, as shown from the fact that samples taken from the centres of blocks of ice in every instance infected sterilized beef infusions with the germs of putrefaction. He even thinks that there may be more danger from ice than from the water from which it is frozen, since sewage and other organic matter is much more rapidly oxodized and decomposed in summer than in winter. Undoubtedly the great bulk of the ice received in the large cities is perfectly wholesome, but at some of the summer resorts, where the supply of ice is taken from local ponds, both the water and the ice may be a constant source of danger.

MAPLE SUGAR.

WHO IS RESPONSIBLE FOR ITS ADULTERATION.

The following communication of O. M. Tinkham, President of the Vermont Dairymen's Association, to the Boston *Journal* contains suggestions of interest:

I notice in your special dispatch from Burlington respecting the Vermont Board of Trade, in the *Journal* of yesterday, the following paragraph:

"The formation of a State Board of Trade will work greatly to the advantage of the producers of butter, cheese and maple syrup as regards prices, and especially with reference to the prevention of the adulteration of maple sugar."

This, I think, will tend to convey a false impression to your readers, *i. e*, that maple sugar is adulterated here by the farmers, the producers of maple sugar, which is not the case, and which meaning I presume your correspondent did not intend to convey. The idea of adulteration by the farmers, strange as it may seem, has come from the improved quality of the product. The maple sugar of fifty years ago, and of even later years, was made under the most primitive conditions in a very crude way. A couple of "crotches" set in the ground, several kettles of various sizes hung on a pole, a fire built under them with big logs either side, wood tubs to catch the sap which was boiled in the kettles, which had no other covering than the canopy of heaven, with ample opportunity to catch such of the leaves, dirt and ashes as the wind might bring, made a dark-colored, strong-flavored product. Now, nice tin tubs or wood kept scrupulously clean, with sugar houses often as nice as the farmer's kitchen, and improved evaporators, or large pans, rapidly change the sap to clear, amber-colored syrup, or sugar of a color approaching that of the refineries, and all of a delicate flavor, far removed from the rank product of years ago. From this some have said the product was adulterated by the farmers with granulated sugar, and this when that article was selling for more than the farmer could get for the product of his sugar orchards. The adulteration, of which there is no doubt an enormous amount is done in the cities by unscrupulous parties, as one such party has lately obtained a patent for making maple sugar by adding to cane sugar a decoction of white oak chips. The person who gets his maple sugar or syrup direct from the producer, or from reputable dealers who do the same, will be pretty certain of getting the pure article.

PRESERVATIVE AGENTS IN BEER.

BY C. A. CRAMPTON, ASSISTANT CHEMIST U. S. DEPT OF AGRICULTURE.

[Taken from Report of the U. S. Dept. of Agriculture.]

(*Continued from page* 113.)

SALICYLIC ACID IN SAMPLES EXAMINED BY THIS DIVISION.

Out of thirty-two samples analyzed by this Division I found seven to contain salicylic acid in sufficient quantities to admit of qualitative proof, or nearly one-fourth of the entire number analyzed. The serial numbers of these beers, corresponding to those in the large table on page 282, are as follows: 4801–3–5–6–17–23–25. These were all bottled beers, one being an imported (Kaiser) beer. None was found in any of the draft beers. Of the nineteen samples of American bottled beers six contained salicylic acid, or nearly one-third. These included the product of some of the largest breweries in

the country, beers that are used to a very large extent all over the United States. Whether the acid is added in the breweries where the beer is made, or whether it is used by the local bottlers, I am unable to decide. In one case I found it in the beer sold here under the brand of a large western brewery, and sent direct to the same brewery for another sample, which gave no test for the acid; unfortunately, I cannot be sure in this case that the firm in question did not know the purpose for which the sample was intended.

SULPHITES.

The use of sulphurous acid as a preservative agent in beer and wine, either in the form of soluble sulphites, liquid sulphite of lime, or sulphite fumes is not at all recent. It is one of the oddest preservatives known. Together with other chemical preservatives its use is forbidden in France, and the German authorities include it with borax, as an agent whose physiological effect is still too little known to allow of its indiscriminate use. It is also sometimes introduced into beers by the hops, which are very generally preserved by means of sulphur fumes. The Bavarian authorities allow its use in sulphuring barrels and hops, as will be seen when their method of analysis is described later. Of course the quantities brought into the beer in this way are very small.

The qualitative test, which is given by many of the books on the subject, viz., the reduction of the sulphur to hydric sulphide by means of nascent hydrogen, is entirely erroneous, as I have proved by experiments made upon the various albuminous constituents of beer with the same test. Hops (known to be free from SO_2), malt, and even ground barley, treated with hydrochloric acid and zinc, gave a very distinct blackening of lead acetate paper in the course of fifteen minutes, and the test applied to the beers examined gave a distinct reaction *in every case*. I concluded from the above described experiments that the H_2S came from the sulphur contained in the albuminous bodies of the grain, which was reduced by the nascent hydrogen. Blank experiments with the reagents used gave no test for sulphur. Since I made these experiments similar conclusions were reached by M. von Klobulow,* who found that sulphur was reduced from any of its compounds by nascent hydrogen, and so complete is this action that he has made it the basis for a new method of estimating sulphur. It was probably by this test that sulphurous acid was found in very old wines, as has been reported.

The method of detecting the presence of SO_2 by its oxidation to H_2SO_4 is probably the best, and can be employed very successfully for the quantitative estimation also. There are various methods in use for effecting the oxidation, as well as for the subsequent determination of the sulphuric acid formed. In the method employed by the Paris Municipal Laboratory the beer is acidulated with sulphuric acid, and a current of pure carbonic acid gas is drawn through the liquid and then into a solution of chloride of barium mixed with iodine water. If SO_2 is present, a precipitate of sulphate of barium forms in the latter mixture. Other oxidizing agents may be used instead of the iodine. Wartha† used nitrate of silver solution for a qualitative test; bichromate of potash furnishes a very convenient agent, and the solution of it may be made standard and titrated afterwards to determine the extent of oxidation. I have used permanganate of potash with very good results for a qualitative test. But probably the best method for both qualitative and quantitative determination is that used by the union of Bavarian chemists, which I have employed in testing the samples examined. It is as follows: 100 cc. of the liquid to be examined are acidulated with phosphoric acid and distilled in a stream of carbonic acid gas, and the distillate received in a flask containing 5 cc. of normal iodine solution. After the first third is distilled off, the distillate, which should still contain excess of free iodine, is acidified with hydrochloric acid, heated, and barium chloride solution added. If a precipitate of more than 10 milligrams is obtained in the barium solution, the wine or beer contains sulphurous acid in excess of the legalized limit. (The allowance of 10 milligrams of barium sulphate is made to admit of the hops being sulphured.) In using this method I have found it necessary not only to have the delivery tube from the condenser dip into the iodine solution, but also to attach a mercury valve to the flask in which it is received. A few of the samples examined by this test gave a slight turpidity with barium chloride, viz.: Serial numbers 4804–6–10–13 and 14, while only one, No. 4815, gave sufficient precipitate to justify the assertion that a sulphite had been added to it. I have not been able to find any recorded instances of sulphurous acid being found in American beers.

BORAX.

This agent, although used extensively in preserving meats, vegetables and canned goods, does not seem to have been applied to malt liquors to any great extent, although it has been found in wines. Its use is prohibited in France and Germany. The test for boracic acid is best applied to the ash. If this is rubbed up with water acidulated with a little hydrochloric acid and a piece of tumeric paper dipped into the solution and then dried, it will show a peculiar reddish tint if borax be present. For a very delicate test a large quantity of the liquid to be tested may be evaporated to a syrup, with a slight addition of sulphuric acid, the residue extracted with alcohol, and the latter ignited. The edges of the flame will be colored green if borax is present. None of the samples examined gave any test for borax.

In conclusion of the work on preservatives, it may be noted that it was during the cold weather of January, February and March. It is quite probable that during warm weather the use of preservative agents is still more general than shown by the analyses.

(To be continued.)

* Zeit. Anal. Chem. 25, 155; Chem. News, 1886, 325.

† Berichte d. Deutsch. Chem. Gesell. 13, 657.

DOMESTIC DIETETICS.

SEASONABLE FOOD.

April.

MEATS. — Beef, lamb, mutton, veal, ham, kidneys, liver, sausage.

GAME AND POULTRY.—Brant, pigeon, snipe, chicken, duck, goose, turkey.

FISH. —Bass, carp, catfish, cod, eel, flounder, halibut, herring, lamprey, lobster, mackerel, oysters, perch, prawn, rock bass, rock fish, salmon, shad, shrimp, smelt, sturgeon, trout.

VEGETABLES. — Artichokes, carrots, celery, lettuce, onions, parsley, parsnips, potatoes, turnips, water-cress, radishes.

PRACTICAL RECIPES.

LEG OF BEEF BROTH.—Take a leg of beef, break the bone in several places, place it in a pan with a gallon of water, remove the scum as it rises, and add three blades of mace, a crust of bread, and a small pinch of parsley; boil till the beef is tender; toast some bread, cut it in diamonds, lay it in the bottom of the tureen, put the meat on it, and pour the broth over all.

STEWED COD.—Cut some of the finest pieces from the thickest part of the fish, place them in a stewpan with a lump of butter the size of a walnut, or larger, three or four blades of mace, bread crumbs, pepper, salt, a small bunch of sweet herbs, and some oysters, with a little of their own liquor. When nearly done, add a large wine-glass of sherry, and stew gently until enough.

POTATO CROQUETTES.—Boil some skinned potatoes in boiling water and salt. When done, drain, and keep them on the side of the fire for ten minutes. Wash them well, then return them to the sauce-pan, and throw in a good-sized piece of butter, and the yolks of three eggs, salt, nutmeg, a pinch of sugar, and a handful of grated Parmesan cheese; divide this into equal parts; roll them on a floured board, forming each one the shape of a cork; dip them into beaten egg, roll in bread crumbs, and fry a few at the time in hot lard.

HORSFORD GRAHAM MUFFINS.—Two cups Graham flour, two cups white flour, two heaping teaspoonfuls Horsford's Baking Powder, two tablespoonfuls of sugar, and a teaspoonful of salt; mix thoroughly together when dry. Then mix with one quart sweet milk, making a thick batter. Bake immediately in muffin rings.

BEEF SALAD.—Take half a pound of boiled fresh beef and cut it into small pieces; take the crisp leaves from two heads of lettuce, cleanse and put them in the salad-bowl; add the beef. To this add a tablespoonful of finely chopped Spanish pepper; pour over the whole a plain dressing and mix lightly before serving.

SARATOGA PUDDING.—A quarter of a pound of bread crumbs, a quarter of a pound of suet, a quarter of a pound of currants, a quarter of a pound of sugar, three eggs, lemon peel, and one teaspoonful of Burnett's Extract of Nutmeg. Make them into five or six small cakes. Fry them brown and serve with sweet sauce.

A NICE SAUCE FOR PUDDINGS.—Half a pound of butter, eight tablespoonfuls brown sugar, one tablespoonful of Burnett's Extract of Nutmeg, and the white of one egg. The butter must be creamed and the sugar beaten into it, then the egg; the wine poured gently in and stirred till the sauce is cold, then add the extract of nutmeg. Make it in a common sauce tureen, stirring all the while. Do not let it boil.

COLD SAUCE (for about eight people).—One heaping tablespoonful of butter, creamed till very light, adding sugar till as thick as you can stir; then add two tablespoonfuls of very rich milk, a glass of good wine, and one teaspoonful of Burnett's Extract of Nutmeg.

BLACK CAKE.—One and one-half cups brown sugar, one cup of butter, one-half cup molasses, one cup sweet milk, three eggs, two teaspoonfuls Horsford's Phosphate Baking Powder thoroughly mixed with four cups flour, two pounds seeded raisins, one of currants, one-quarter pound citron finely sliced. Bake in a moderate oven.

ONION OMELET.—Cut up a small sweet onion, fry it brown in butter, make an omelet of four eggs beaten light with a teaspoonful of milk added, cook it on a hot pan and just before removing sprinkle with a little salt, take from the fire and add the onion, fold and serve immediately.

"A **TOP SAWYER.**" The manufacturers of Sawyer's Crystal Blue.

NATURALLY REDUCED IRON.—On the North Saskatchewan River an almost horizontal bed of lignite may be seen cropping out at intervals in the river-bank for several miles, overlaid by dark gray clay-shales and gray and yellow soft argillaceous sandstones containing nodules of clay ironstone, containing 34.98 per cent of the metallic iron. The seam of lignite has been completely burned out over a considerable area, leaving the surface covered with a bed of *débris* of ashes, clinkers, and burnt clay, in places to a thickness of 20 feet, supporting at present a thick growth of grass and underbrush. From this mass of burnt clay and cinders, pieces of metallic iron can be readily picked out, weighing in some cases as much as 15 or 20 pounds, doubtless derived from the nodules of ironstone mentioned above, which have been reduced to the metallic state by the heat caused by the burning of so large a body of lignite.

A SUBMARINE METEORITE.—What is believed to be a meteorite has just been dug out of the ferry harbor of Nökjobing, in Denmark. The stone, which weighs about half a ton, was found in soft mud, and no other stones were near it. It is very dark in color, contains iron, and is of unusual weight for its size, the work of moving it being very laborious. It has now been blasted to pieces, which will be examined scientifically.

WINE.

ITS PREPARATION FOR PRESERVATION.

By F. E. Engelhardt, Ph.D.

During the time which elapses from the pressing of the grapes till the wine is put into the market for consumption, it has to be kept with the greatest care. Neglects in treatment and preservation during this period produce often changes which may become very serious if not at once attended to. It is not my object to enumerate all these changes. I will only speak of one change in particular and give the remedies usually employed and recommended against these changes.

The souring of the wine is the most dangerous one of these and is due to a great access of air to the wine. It is preceded by the appearance of mould (*mycoderma vini*). When the souring of the wine just begins it is drawn into a clean cask, previously sulphurized and then cleared with the white of eggs. Since new oaken casks contain tannin we might think that they would assist in separating the foreign matter from the grape juice. But they cannot be used directly, because the peculiar smell and the extractive matter of the wood would go over into the wine; hence new casks are first washed out with a diluted hot solution of salt water, then well soaked and rinsed with pure water. Now, a quart of alcohol is poured into the casks, thoroughly shaken with it, so that the alcohol comes in contact with every part of the barrel inside, and then the alcohol is set on fire and while burning the young wine is poured into them.

The sulphurizing of the wine casks consists in burning in the casks narrow strips of cotton or linen cloth saturated with sulphur. The sulphur while burning produces sulphurous acid, which not only fills the cask, but also penetrates into the pores of the wood. The antiseptic properties of sulphurous acid are so well known that I need add nothing further.

If the avidification is a little more advanced finely powdered charcoal is mixed with the wine and the latter after some time drawn off into another cask and clarified.

The addition of small quantities of finely powdered quick lime or carbonate of potash to the wine are used for the same purpose. Rhine wines that become sour are usually cleared with a mixture of honey and skimmed milk. The addition of grape or cane sugar, together with some yeast to induce a new fermentation in the wine, is also recommended; but the only certain remedy against this difficulty, when it first commences, is the heating of the wine to about 145° Fahr. according to the method of Pasteur, thereby killing the vinegar ferment—*mycoderma aceti*. If the change is too far advanced the wine must be made into vinegar.

The following list gives most of the remedies recommended: Still must, grape sugar, cane sugar, wine yeast, honey, boiled grape juice, juice of Spanish raisins, tannin, cream tartar, tartaric acid, carbonate of potash, charcoal, quick lime, carbonate of lime, lime water, bi-sulphite of lime, salicylic acid, alcohol, brandy, skim milk, etc.

When the wine, during the process of ripening, does not become perfectly clear, the last remnants of the suspended matter are removed by artificial means: White of eggs, animal jelly, isinglass, gum-arabic, island moss, gelatine, native alumina (Tierra del vino in Spain —Kaolin in Germany), blood, milk, filtration with the exclusion of air, charcoal, etc., are the means usually employed. Mr. Dyer patented, in 1835, in England, a clarifying powder, which was composed of dried blood, dried white of eggs, dried bones of young animals. When used, this powder is stirred with water, left standing for eight hours, and then mixed with the wine.

I stated above that for the production of wine possessing the finest qualities, the grapes must obtain their highest degree of ripeness, which, of course, can only happen in the most favorable years in the greater part of the wine producing countries. In ordinary or poor wine years only a very inferior wine can be produced. To remedy this difficulty the celebrated French chemist (and Minister of Finance) Chaptal, recommended in his essay, "The Art of Making Wine"—"In case the grapes have not obtained their maturity add to them until the must has attained the sweetness of the perfectly ripe grape."

The so-called chaptalizing of the grape juice consists in removing from the latter the excess of acid by the addition of marble dust or wood ashes and then adding to it the required amount of sugar. Sixty parts of free acid in the juice are neutralized by fifty parts of marble dust. The quantity of sugar to be added depends partly on the quantity of sugar present in the juice and partly on the amount of alcohol required in the wine; hence if the grape juice has but 12 per cent. of sugar and a wine shall be produced having nearly 10 per cent. of alcohol, 8 pounds of sugar must be added to every 100 pounds of grape juice.

This method is especially in use for the production of Burgundy wine. It is well adapted for "bouquet wines," since their peculiar characteristics are thereby not weakened.

Fortifying wines consists in the addition of brandy, Cologne spirits, or French spirit to the wines to increase their alcoholic strength and to stop further fermentation. This method is especially practiced in the southern part of Europe, Portugal, Spain, France, Italy and Greece.

Dr. Gale's method consists in the preparation of a so-called normal must, with 0.5 to 0.6 per cent. of free acid and 22 to 24 per cent. of sugar. Hence, if a must contains from 1 to 1.2 per cent. of acid it is mixed with an equal quantity of water, and if the sugar is equal to 20 per cent. in the grape juice we must add 14 parts of sugar to every 100 parts of grape juice. This method is especially employed in Germany in bad wine years and for unripe grapes.

The method of Petiot of improving wine, and especially of increasing its quantity from 100 to 500 per cent., dates back to 1852. In this year Petiot produced from a certain quantity of grapes instead of 7,200 quarts no less than 34,200 quarts.

First, he added to the expressed juice an equal volume of sugar water containing the same amount of sugar as the expressed juice.

Secondly, to the remaining grape pulp he added a new quantity of sugar water with 18 per cent. of sugar, and fermented it for three days. This latter experiment he repeated three times in succession with the same grape pulp, and sugar solutions of the same strength, namely, from 22 to 23 per cent. of sugar, obtaining this after fermentation, as he says, "Wine in the full sense of the word."

The infusion wines (trester wine) resemble, according to Thudichum and Dupré, "natural wines in all essential qualities; they contain all the essential ingredients, and almost in the same proportions as the natural product."

The value of Petiot's method to the wine producer, especially in unfavorable seasons, cannot be over estimated, since wine made after this method is ready for bottling in four months, instead of three to five years, as with the natural wines." They are not subject to disease like the natural wine, and possess a most remarkable stability, hence require little or no care and almost no fining. These artificial wines are aromatic, retaining the perfect bouquet of the natural ones. In case the grapes contain an insufficient amount of acid for the several infusions, tartaric acid or cream of tartar is added, and tannin for red wines; also mallow flowers or whortleberries to the pulp before fermentation, and alum to the wine to heighten the color.

These infusion wines are produced in large quantities in all countries where the law does not prohibit their production.

Schule's method, introduced in 1865, and said to be practiced especially by wine dealers in England, Germany and Austria, consists in the addition of from 1 to 3 per cent. of glycerine to the wine, whereby the wine, if young, appears older and has more body and stability.

To what extent these various so-called wine improving methods just enumerated are practiced to-day on European wines designed for exportation to this country I am not prepared to state.

Very heavy fines, together with confiscation of the goods and imprisonment, for wine adulteration, have been imposed on the offenders for the last few years in Germany and France.

ADULTERATED FOODS.

SOME STARTLING VIEWS FROM A HIGH OFFICIAL SOURCE.

On March 17th, the Committee on Agriculture of the U. S. Senate resumed its hearings upon the lard question. Prof. Wiley, chemist of the Department of Agriculture, appeared and gave the committee the result of his microscopic examinations of the various samples of lard submitted to him. Most of them were adulterated with cottonseed oil, but he didn't consider it unwholesome. At the laboratory he had rendered the head, entrails and intestines of the hog, and found them to make a pure lard.

Mr. Fox inquired whether the lard so rendered could be distinguished from pure lard. The witness replied that they were just alike. Perhaps there was a difference of color, but not sufficient to base any data upon.

In reply to a question by Mr. Cromwell, Prof. Wiley said that he did not think there was any way of distinguishing dead hog grease from pure lard. The way the hog died had no effect upon the lard.

Senator Blair then proceeded to examine the witness as to the results of his investigations into food adulterants in general. Butter, said the witness, was adulterated with cottonseed oil, but not to any great extent. The chief adulterants of butter were neutral lard and beef stearine. This compound was now called oleomargarine. Milk was adulterated mostly by water. (Laughter.) The adulteration of milk was universal, except in localities where there were very rigid milk inspectors, as was the case in Boston. In the city of Washington about 100 per cent. of the milk was adulterated. The adulteration of milk was chiefly accomplished by the removal of the cream. One way to adulterate milk was to milk the cow only two-thirds, leaving most of the cream in the udder. This was sold as pure milk, while the remaining one-third was milked and sold as cream.

All the condiments examined by him were adulterated with peanut hulls. Beer and ciders were largely adulterated with salicylic acid, which was injurious to health. In beer, artificial bitters had been found instead of hop bitters. Tea and chocolate were largely adulterated with simple substances to increase their bulk. Molasses was almost universally adulterated with glucose. Sugar was not adulterated. Syrup could be made by pouring sulphuric acid on old rags; but he did not think it was done to any extent. Rags were more valuable for other purposes. Sugar could be made out of sawdust and sulphuric acid. A hundred pounds of rags would make a little more than a hundred pounds of syrup.

Mr. Blair—Would it be as good as any other syrup?

Prof. Wiley—Oh, yes.

Senator Blair—So these disgusting associations are, in scientific minds, disassociated from the products.

Prof. Wiley—Yes.

The Chairman—So "to the pure all things are pure?"

Prof. Wiley—Yes, sir.

Senator Blair—These lards made from the intestines are as good as any?

Prof. Wiley—I had just as soon eat compound lard as pure lard.

Senator Blair—Do you eat dead hog lard?

Prof. Wiley—I presume I do. It is just as good as any other. I would as lief eat it.

The Chairman—It is charged that manufacturers of lard take dead hogs and throw them in, entrails and hair and heads, and white grease is rendered from them. Would that be nocuous?

Prof. Wiley—I think not. There is nothing deleterious in decomposing animals. Indeed, in some cases they are more innocuous.

Mr. Cromwell read an affidavit from Mr. Tietjen to the effect that the watered lard was manufactured for sale in the West Indies and its qualities were well known to the buyers. It was not for sale in the United States.

Mr. R. H. Blackmore, of the firm of Halsted & Co., of New York, read affidavits and petitions showing that watered lard was made solely for the West Indies and other foreign markets, and protesting against any law which would discriminate against that lard, which was not intended for home consumption. He called attention to the despatches from Denmark stating that that country had prohibited the importation of American hog products and steam lards, and Mr. Cromwell read a telegram from Armour & Co. stating that this prohibition expressly excepted refined lard.

The committee adjourned until two weeks from to-day, when counsel will be given an opportunity to sum up the evidence.

DELICATE TASTES.

WHAT THE PARISIANS DRINK.

Absinthe, the favorite intoxicant of the French, is almost always manufactured with alcohols of industry, ill-rectified, rendered green by the addition of the sulphate of copper, and saturated with resin, so as to give it the beautiful greenish-white precipitate produced by pouring water on it, and which drinkers so much admire. "Vermouth," another favorite liquor, is adulterated with hydro-chloride or sulphuric acid, in order to give it a pungent taste. "Kirsch" is extracted from the leaves of the cherry laurel, and contains as much as twenty-two centigrams prussic acid per litre, instead of five or six centigrams. Rum is manufactured always with alcohol distilled from beet-root, to which is added ether and formic acid. The "bouquets" of brandies are manufactured by the action of sulphuric acid on castor oil. The coloring matters employed are extracted from log-wood, the elder, sorrel, fuchsine and coal. Such is the trash which is daily consumed by the Parisians.—*Paris Cor. Medical Record.*

DISINFECTION.

WHAT IS INVOLVED IN THE PROCESS.

"The vessel has been disinfected." That is about all you hear said when a vessel, carrying passengers affected with a contagious disease, arrives at port. "Perfectly safe," the health authorities say; and so it generally turns out to be, for no matter how violent the disease, it scarcely ever breaks over the line set by the health protector of the country. "Thoroughly disinfected, and placed in quarantine," is not a long sentence, but it means a good deal. "Disinfection," is a more serious undertaking than is generally supposed by those who have never witnessed its thoroughness. Here is the way the steamer "Alesia," arriving in New York, with cholera on board, was handled. The passengers were first removed, the sick to the hospital for epidemic diseases, the others to a quarantine station, where they were watched carefully by competent physicians. Then the work of getting rid of the germs of the disease began. The vessel was twice washed with scalding water, and then washed again with a solution of corrosive sublimate. Think of washing every accessible part of a big ocean steamer twice with boiling water and then with a solution of corrosive sublimate. But that was only a beginning. As soon as this was done the hatches were closed and the decks covered with tarpaulin and 100 lbs. of sulphur burned in the hold, the hatches being closed 12 hours. Then every accessible part of the vessel was again washed (with brooms and sponges) with a solution of corrosive sublimate. Then the hatches were again closed and 150 lbs. of sulphur burned. Every textile fabric, mats, carpets, clothing of the crew, and bedding, were subjected to a long boiling process. Clothing of the passengers were "cooked" with steam, inside a close tank. The baggage, every piece of it, subjected to hot steam and sulphurous acid gas many hours. The vessel was kept for 14 days in the lower bay, away from all other vessels, and finally, as a parting precaution, all exposed portions, except the saloons, were repainted, and the baggage of the passengers again disinfected by the means above indicated.

COLOR BLINDNESS.—Prof. Ramsay thinks that color blindness is a defect of the brain instead of the eye.

WASPS' MEMORY.—According to the naturalists wasps remember the locality of their nests just ninety-six hours.

WORTH KNOWING.—To preserve the elasticity of India-rubber, wash it five or six times a year with slightly alkaline water.

RHEUMATIC CONDITIONS.—European specialists have made the curious observation that acute rheumatism is more prevalent in dry than in rainy weather.

NEW PURIFIER.—Electricity is being used to purify sewage. It produces a chemical change by which the solid matter which comes to the surface and pure water flow off.

MUSTARD OIL.—A new lubricant, the use of which is advocated in the Austrian *Railroad Journal*, is mustard oil. It remains perfectly fluid at the low temperature of 14° Fahrenheit, and will keep unchanged for years.

ELECTRIC SAFETY LAMP.—Mr. Ellis Lever's offer of a prize of $3,000 to anyone who shall invent a miner's safety lamp has set all the electricians thinking. They believe electricity will win the prize.

THE WORLD'S COIN.—It is estimated that there are $5,000,000,000 of coin in the present circulation of the world, or available for circulation. Of this magnificent total $3,200,000,000 are in gold and $1,800,000,000 are in silver.

EXPERT INDIANS.—The squaws of the Navajo tribe manufacture wonderful blankets with the aid of sharp pointed sticks. It requires from one to four months time to make a single blanket, which is, however, so firmly made as to be nearly impervious to water.

HEADACHE CURE.—Indian hemp, in doses night and morning of one-half a grain, and increased, if need be, to a grain, and continued for some time, is spoken of by Mr. Stephen MacKenzie, lecturer on medicine at the London Hospital, as the most valuable remedy he has met with in the treatment of persistent headache.

POLICE SIGNALS.—A writer in the *Electrical Review* states that a system of signals is on experimental trial in New York in which different colored lights are flashed on the lamp-post. It is mainly intended to enable policemen to communicate quickly with each other when in pursuit of midnight criminals.

DANGEROUS NESTS.—It is a curious fact that wasps' nests sometimes take fire, as it is supposed by the chemical action of the wax upon the material of which the nest is composed. Undoubtedly many fires of unknown origin in hay-stacks and farm buildings may thus be accounted for.

HEAT AND MAGNETISM.—The magnetic properties of iron have been found by M. P. Ledebœr te be unaffected up to a temperature of 1,100° Fahrenheit, beyond which they are rapidly lost, becoming scarcely perceptible at 150°, and entirely disappearing at 1890°. They return in the same way as the metal cools.

CONTAGIOUS ROT.—It seem that "dry rot," the enemy of builders, is a sort of contagious disease. Good authorities state that it can be carried by saws and other tools which have been in contact with infected wood, and that such transition and impregnation is often the cause of the mysteriously rapid decay of originally sound timbers.

GASOLINE BICYCLES.—The use of gasoline as a fuel for small motors is taken advantage of in a recent invention of a small engine to be attached to bicycles and tricycles. With this it is claimed that a maximum speed of ten miles an hour can be attained upon level ground. Sufficient fuel and water can be carried for a tour of twenty-five miles, and the weight of the whole plant, with tanks filled, is but 185 pounds.

MEAN HEIGHT OF LAND.—The mean height of the land above the sea level, according to Mr. John Murray, is 2,500 feet, and the mean depth of the ocean is 12,480 feet. Only 2 per cent. of the sea is included inside a depth of 500 fathoms, while 75 per cent. lies between 500 and 3,000 fathoms. If the land should be filled into the hollows the sea would roll over the earth's crust to a uniform depth of 2 miles.

ELECTRIC RAILWAYS.—The last year has seen a wonderful growth in electric railways. There are now in the United States over eighty miles of road on which the motive power is electricity. Eighteen towns have plants in operation, in lengths varying from one to eleven miles. Contracts have been made for roads, and they are now being constructed in seventeen other towns, and there are fifty-nine projected roads.

BANK CAPITAL.—According to a recent compilation, the bank capital and surplus in the United States are distributed as follows: North Atlantic States, $447,197,805; Middle States, $126,001,667; Western States, $55,861,333; Pacific slope, $11,896,601; South interior, $10,121,273; Southern States, $103,900,823, a total of $754,979,502. There are 3,070 banks, averaging $246,000 apiece. In the classification the figures for "Middle States" embrace Ohio, Indiana, Illinois, Michigan and Wisconsin. The figures for "Western States" embrace Iowa, Minnesota, Kansas, Nebraska and Dakota. The "South Interior" includes Arizona, Colrado, Idaho, Montana, New Mexico, Utah and Wyoming.

HEALING BY PHYSICAL CONTACT.—There is no question but that there are numerous persons so generously endowed with vitalizing fluid as to be capable of alleviating pain and healing disease by physical contact, who have no conception of it themselves. We have been made acquainted with a number of instances of cure by such healers without contiguity or manipulation of any sort, their mere presence being sufficient to effect that object. This is particularly the case in respect to the lighter forms of nervous trouble. The presence of such persons in the sick chamber is of itself a healing balm to the afflicted, who is able to feel the vitalizing force, though ignorant of its source. On the other hand, there are persons whose presence at the bedside of a sufferer only adds to his suffering. Hence it is that the family physician, of all others, should be naturally refined and sympathetic, at once capable of comprehending not alone the physical but also the mental or spiritual wants of his patients, and in a manner ministering to them out of his abundant sympathy and good cheer.

A UNIVERSAL SOLVENT.—The fury of the chemical domain is the element fluorine. It exists peacefully in company with calcium in fluor spar and also in a few other compounds, but when isolated, as it recently has been by M. Henri Moissan, it is a rabid gas that nothing can resist. It combines with all the metals, explosively with some, or if they are already combined with some other non-metallic element, it tears them from it and takes them to itself. In uniting with sodium, potassium, calcium, magnesium and aluminum, the metals become heated even to redness by the fervor of its embrace. Iron filings slightly warmed burst into brilliant scintillations when exposed to it. Manganese does the same. Even the noble metals, which at a melting heat proudly resist the fascinations of oxygen, succumb to this chemical siren at moderate temperatures. Glass is devoured at once, and water ceases to be water by contact with this gas, which combining with its hydrogen at the same moment forms the acrid glass-dissolving hydroflouric acid and liberates ozone.

AMBERGRIS.—This singular material is a fatty substance of an ash-gray color, with yellow or reddish striæ, like those of marble, is found in lumps of from half an ounce in weight to 100 lbs. and upwards, floating on the sea, or cast upon the seashore in different parts of the world, and is also taken by whale-fishers from the bowels of the spermaceti whale. Much ambergris is obtained from the coasts of the Bahama Islands; it is also brought from different parts of the East Indies, and the coasts of Africa and Brazil. It is probable that all of it is produced by the spermaceti whale, and that it is a morbid secretion in the intestinal canal of that animal, derived from the bile. It is highly valued upon account of its agreeable smell, and is much used in perfumery. The price is about 20s. an ounce. It has been strongly recommended for medicinal uses, but is scarcely employed in Europe; although in some parts of Asia and Africa it is much used as a medicine, and also in cookery as a condiment. The specific gravity of ambergris is scarcely more than 0.9. It almost always contains black spots, which appear to be caused by the presence of beaks of the *Sepia octopodia*, the principal food of the spermaceti whale. It consists in great part (85 per cent.) of a peculiar brilliant white crystalline substance called *Ambrein*, which is obtained from it by treating it with alcohol.—*Alden's Manifold Cyclopedia.*

BUSINESS NOTES.

HEALTH BRAIDED WIRE UPHOLSTERY.

The recent invention and introduction of upholstery articles made of "torsion-braided" wire in place of the hair, straw, "excelsior" and similar articles, promises to work a peaceful revolution in one of the most important fields of domestic economy. Thus far the new system has been successfully applied to mattresses, pillows, upholstery springs, carriage and sofa cushions, easy chairs and sofas. Its importance, great at first sight, grows upon the reader who will give but a moment's thought to the present condition of affairs in the civilized household. The extent to which the art of the upholsterer enters modern life is seldom taken into consideration by the average citizen Of the bed furniture, the bolster, pillows and mattress are stuffed with hair, straw, feathers, or similar soft and elastic materials.

For years this subject received little or no attention; lately, however, a lady, the head of a large school in London, found that old rags, cloth and rubbish had been used to stuff the bolsters and pillows in the dormitory of that institution, and that the filthy material was in all probability a source of infection to the unfortunate youths who were supposed to be enjoying the comfort and luxury of a Christian home.

Spurred to action by this discovery the local health authorities made investigations, disclosing the practice to be so common in the trade as to excite neither comment nor curiosity on the part of dealers. Examinations made by physicians prove the same evil to exist upon a large scale in this city. While there can be no grave objection raised to the practice when it is followed under wise precautions, yet when the liability to yield to industrial temptation is taken into account, it is clear that something should be done to prevent what may be already a very serious source of infection, and even contagion, and to remedy the evils that now exist.

When padding is fresh and new it is admirable hygienically, being elastic, light, porous, and therefore cool. With wear and tear it loses its virtues. It may become the breeding ground of parasitic life. It does absorb gases, vapors and similar substances, and so after a period of some duration demands renovation or else renewal. In respect to the germs of various diseases, there is now no doubt but that the stuffing may act as a vehicle of sickness to a very dangerous extent. Despite these facts, furniture of this class is, and from time immemorial has been, a favorite commodity with the public.

If a home is broken up by disease, and the bereaved father or mother stops housekeeping, the invariable practice is to hoist the red flag, call in an auctioneer, and sell all the goods to the highest bidders. When the disease is of a virulent type, such as smallpox, cholera and yellow fever, the board of health quarantines the place and disinfects everything contained within its walls. But with the minor complaints, no matter how contagious or infectious, nothing is ever done. Mattresses reeking with scarlet fever germs, chairs filled with the bacteria of croup, and pillows containing the microbes of consumption, are thrown upon the market and are carried to healthful homes by ignorant buyers, there to reproduce the disease, suffering and death they have just witnessed. Strangest of all, the most popular auctions are those held in private houses where fatal sickness has induced the family to relinquish housekeeping and to dispose of their effects. An auction of new furniture at a bankrupt sale, on the other hand, attracts few buyers.

This phase of the question unfortunately shows its best side. The bed fixtures and upholstery that have been referred to are of the finest quality and make but a small fraction of the entire amount. Beneath the fine curled hair, the down and first quality feathers, is a long list of inferior and cheaper substances. In this list are common horse-hair, the refuse of woolen and cotton mills, "excelsior," ordinary shavings, cocoanut fibre, straw, hay, corn husk, old rags, shoddy refuse, waste from various industries, rubbish, and, worst of all, the stuffing from worn out and no longer usable ware. Thus, for example, a curio hunter finds and buys a "kangaroo sofa" in a squalid tenement house. He wishes only the grotesque frame, and sends it to an upholsterer's to be made anew. The artizan does his work thoroughly, and, if well paid, sends to his customer a practically new article. The old stuffing he keeps and uses in his next cheap job. In fact, if he is not well paid in the original instance, he re-uses the old stuffing, merely adding enough new material to turn out a workmanlike affair. Trade habits and instincts are immortal, and it is highly probable that the stuffing employed by furniture men is used and re-used until it falls to pieces. The only exception seems to be in the case of articles stuffed with straw. Here an ancient custom interferes with trade and periodically empties mattress and bolster and consumes their straw and hay contents in a royal bonfire.

When it comes to old rags, the lowest depth of indecency is reached. The old rag business is to-day in two sets of hands. One, the foreign, represents the shreds and tatters of the Egyptian, Italian and Spanish beggars. These are so vile and dangerous as to require continual governmental supervision by both the consul at the port of shipment and the quarantine commissioners at the destination. The other, the domestic, is now almost altogether in the hands of the Italian and Hungarian ragpickers. These gather the material from the ash-barrels, garbage-heaps, gutters, dumps and dirt-scows of the city, and bring them to sorting-yards where they are divided according to their composition and color. The yards are in the lowest slums of the great cities. They are hot-beds of disease and are narrowly watched by the Board of Health. The sorted rags, unwashed, are piled into large bags and taken to the customers of the padrones. While these in the main are felt makers, shoddy manufacturers and paper men, yet a considerable minority are upholsterers and furniture makers. The vastly greater cheapness of old rags to hair, feathers and the like, makes them very popular to the two classes of tradesmen just named. And cost and saving are rulers in trade.

To use such rags in stuffing bolsters, pillows and mattresses is simply a crime. They are not only dirty, but they are so dirty that they are slowly decomposing. The decaying organic matter in their interstices produces just enough heat to make it a superb forcing house for germ life and parasite life of every kind, and is itself food sufficient to support their existence for a long time. Their mode of collection and disposition almost warrants them to contain some dangerous form of life. It is bad enough to gather such filth; it is worse to work among them; it is worst of all for a human being to make them unconsciously his bed and there to pass hours in which the body is at its weakest and most liable to attract disease.

The new system, which makes all upholstery articles out of wire, woven, twisted and braided, stands out in bold contrast with what has been described. Being fine metal it can absorb neither odor, gas or vapor. It has no pores, filose surfaces nor interstices where dust or dirt can collect, or where disease germs can find refuge. While as soft as feathers and as elastic as the best curled hair, it does not wear into lumps as does the former, nor lose its strength and resilience as does the latter. It retains neither heat nor moisture and has no holes nor corners, thus being incapable of sheltering moths, vermin or other insects. Last, but not least, it never soils, breaks nor wears out. Those who desire further information or who wish to invest in household apparel of the highest intrinsic value can gratify either by applying to the Torsion Braided Wire Upholstery Company, at No. 1017 Chestnut Street, Philadelphia, the sole manufacturers of these new and admirable goods.

CALIFORNIA WINES.

It is indeed a pity that the champagne trade of the California product should be so badly handicapped by the fickleness of Madame Fashion on one side, and, what is infinitely worse, the villainy of unscrupulous manufacturers on the other. There are bogus champagnes as well as bogus pianos. In San Francisco, for instance, are several concerns who pretend to manufacture champagne by pumping gas, generated from vitriol and marble dust, into inferior still wines and palming the poison off to the unsuspecting many as natural made California sparkling wine. And the reputation, so nobly fought for and won wherever the pure California champagne has found an entree, is being sorely undermined by these false pretences.

When Americans learn to be honest with themselves by acknowledging true merit in their own products, California champagne will occupy a very prominent position.

Probably the largest concern on the Pacific coast who have constantly made only pure wines and have had to fight the most unscrupulous competition, is that of Arpad Haraszthy & Co., of San Francisco. Mr. Haraszthy is president of the State Board of Viticulture and owner of the largest champagne establishment in California. A native Hungarian, one of the greatest wine growing countries in the world, with the experience obtained by a long residence in the champagne district of France, he has probably had the best practical and theoretical experience as a wine grower.

California champagne making dates back to 1862, when the first successful experiments were made. As our readers well know from numerous articles we have published from time to time, champagne is produced by a blending of different wines, for no one wine will sparkle by itself. By ascending to a loft we find blended wines in casks, which are being kept for from one to two years before being put into bottles. This is called the cuvee, and means a mass of wines formed by mixing the different varieties of grapes, which by their differing natural character, improve and complete each other in such a state of combination established by the operation of blending. It is necessary to ascertain the exact proportions of alcohol, sugar and acid, or the *mousse* (the sparkle) of the wine will be too violent in one case or there may be no sparkle and the wine be flat. The wines are chosen for their color, lightness of body, saccharine properties, alcoholic strength and bouquet. They are blended in a vat holding 12,000 gallons of wine. The intricacy of blending is perhaps best understood by the blend adopted by Mr. Haraszthy for 1883, 1884 and 1885.

The blend for 1883 was made in four tanks of 12,000 gallons each, comprising,

	Gallons.
White Zinfandel of 1882	6,000
Orleans Riesling of 1882	2,100
Feher Szagos of 1881	1,000
Chasselas of 1882	1,900
Burger	1,000

The blend for 1884 was made in five tanks of 12,000 gallons each, viz.:

	Gallons.
White Zinfandel of 1882	4,000
White Zinfandel of 1883	2,000
Burger of 1883	1,000
Orleans Riesling	2,400
Chasselas of 1884	2,300
Feher Szagos	300

The fluid of 1885 was made in six tanks of 12,000 gallons each, viz.:

	Gallons.
White Zinfandel of 1883	5,000
White Burger of 1884	2,000
White Colombar of 1885	1,600
White Malvoisie of 1884	1,400
White Verdal of 1884	500
Gray Riesling of 1884	500
Meunier of 1883	500
Franken Riesling of 1884	400
Folle Blanche	100

Which tables not only show a gratifying increase in the volume of the firm's trade, but the greater perfection obtained annually.

The making of champagne is nothing new. We will not describe it again, but only say that this firm uses only new and the most expensive corks coming into this market.

The three leading brands of California champagnes are "Extra Dry Eclipse," "Grand Prize" and "Sillery Mousseaux." All these brands are exported largely to Mexico, China, Japan, Sandwich Islands, England, South and Central America, and will supersede the French brands in this country as soon as the wealthy Americans cease to purchase oil paintings by the yard and gauge the quality of champagne by the enthusiasm of the price.

With this brief sketch before us, a word or two regarding the great house of Arpad Haraszthy & Co. appears apropos. The firm is now composed of Henry Epstein and Arpad Haraszthy, and was originally established in 1864. It is the only house in the State which was ever able in all these years to turn upon the market continuously first-class champagnes, produced only by the natural process, that of fermentation, in the bottle. In the preparation of their champagnes no grain spirit or cognac spirit of any kind is used, Mr. Haraszthy's ambition being to make wine that is absolutely pure. That he has succeeded is shown by the rapid increase in the sale of his champagnes, which aggregated 9,000 cases in 1880 against 14,000 cases in 1886, of which $3,000 cases were sold by the New York agency. The choicest still wines of California bear their brand, and their immense cellars are filled with all kinds of California wines, hocks, Burgundies, clarets, brandies, etc., with a total capacity of 500,000 gallons. They own the Orleans Hill Vineyard in Yolo County, planted in 1859, and comprising 700 acres planted with 360 acres of the finest grapes, comprising all the Medoc varieties and many from the Burgundy, Champagne and Rhine wine districts, numbering some 45 varieties. These are used to test the soil, climate and the adaptibility of these varieties thereto. In a future article we shall speak of some of the other kinds of wine made by this truly progressive American firm.

LIFE INSURANCE AT ACTUAL COST.

Persons desirous of obtaining life insurance at actual cost, should write for circulars to the SECURITY MUTUAL BENEFIT SOCIETY, No. 233 Broadway, New York.

This Society claims that since its organization, the cost to a member of middle age has been *less than twelve dollars a year* for each thousand dollars of insurance.

GINGER.

Ginger, called in French *Gingembre*, and in German *Ingwer*, is the rhizome or underground stem of *Zingiber officinalis*, a perennial reed-like plant growing from three to four feet high, a native of the warmer parts of Asia; is not known in a wild state, but is cultivated in Asia, West Indies, South America, western tropical Africa and Australia. The use of ginger as a spice has been known from very early times. In the second century it was among the imports at Alexandria liable to the Roman fiscal duty. Ginger is known in commerce in two distinct forms, termed, respectively, coated and uncoated ginger, as having or wanting the epidermis; the first being simply washed and sun-dried; the second being scraped and frequently bleached, either with sulphur fumes or by immersion in a solution of chlorinated lime. The whitewashed appearance of much of the ginger as we see it, is due to its being washed in whiting, or even coated with sulphate of lime. This whitewashing is generally done to cover inferior quality.

The principal constituents of ginger are starch, volatile oil (to which the characteristic odor of the spice is due) and resin (to which is attributed its pungency). Its chief use is as a spice or condiment, but as an aromatic and stomachic medicine it is also used internally. The rhizomes, collected in a young green state, washed, scraped and preserved in syrup, form a delicious preserve, which is largely exported both from the West Indies and from China. Cut into lozenge-shaped pieces and preserved in sugar, it also forms a very agreeable sweetmeat.

The ginger known as Jamaica ginger commands the highest price, consequently every effort is made to give other ginger a similar appearance. The East India ginger resembles the Jamaica ginger, and is most frequently substituted for it.

The medical properties of ginger are those of a grateful stimulant and carminative. It is often given in dyspepsia, flatulent colic, and the feeble state of the alimentary canal attendant upon atonic gout. The only official liquid preparations of ginger as established by the United States Pharmacopœia are the fluid extract and the tincture, the British Pharmacopœia also recognizes a stronger tincture. The fluid extract contains fifty ounces of ginger to the same quantity of liquid; the official tincture, twenty parts of ginger to one hundred parts of fluid, and the strong English, fifty parts of ginger to one hundred parts of fluid. What is known as essence of ginger, when made by a reputable firm, is much stronger than these tinctures. Unfortunately the great bulk of so-called essence of ginger is only a strong tincture of capsicum (cayenne pepper) flavored with ginger. To make a really good essence of ginger requires large capital, long experience and a firm backbone. Strange as this may seem, it is nevertheless true, for only large firms having ready money always at command are offered the best lots of ginger coming into market. After they have had their pick the balance is sold to jobbers and small manufacturers. Backbone is most necessary of all, because the competition is so great in the sale of essence of ginger that prices are lowered to meet the market, and here is where the moral courage is necessary not to yield quality to either quantity or price, and it is well right here to warn the public that when they want essence of ginger which they will be sure is the genuine, pure, unadulterated essence, to demand the brand which they absolutely know to be such. Among these we can recommend to our readers that prepared by the old and well-known firm of Joseph Burnett & Co., of Boston. We do not say that this is the only pure extract of ginger, but we do affirm most emphatically that if any one will call for and insist upon having Burnett's Ginger, he will be sure of getting just what it is labeled, the best essence of ginger that can be made from the choicest materials. As to the other preparations of this old house we will speak in a future number.

GATE CITY STONE FILTER CO.

A most convenient and admirable filter which removes all impurities from drinking water is manufactured by the Gate City Stone Filter Co., office and salesroom at 46 Murray Street, N. Y. City. A natural stone is used as the filtering material, which separates all extraneous substances from the water, and renders the altter perfectly pure. No metal is used in the construction of this filter, as all common metals are liable to generate poison, and galvanized metals more especially. No charcoal, sand, or other compound is required, as they all become more or less foul with living organisms, while charcoal has no chemical effect on water, and the filter is as easily cleaned as a water pitcher or any household dish. The filter is fitted with separate patent ice chambers to cool the water, and these do not permit the melted ice to mingle with the pure filtered water.

All water is more or less filled with impurities detrimental to the health of the consumer, and the above filter extracts such and leaves the water absolutely clean and wholesome. It is certainly an invaluable article for use in every house, store, office, and in all places where good drinking water is desired.

THE IMPORTANCE OF THE BANANA AND COCOANUT TRADE.

Tropical fruits for many years past have met with an immense sale in the New York market, and among such products the banana is the most highly appreciated.

It is both wholesome and delicious, and can be eaten by even sick people without the least injury. It is easily digested, contains a great deal of nourishment, and can be used raw or cooked. In tropical countries the banana is sliced and prepared in many tempting and appetizing forms. The importations are constantly increasing and reach over 1,000,000 bunches during the season from Port Simon, Costa Rico and Jamaica. The largest importer is Mr. George H. Richardson of Nos. 228 and 230 Greenwich Street, New York, and he controls the importation of Port Simon, Costa Rica bananas and also those received from Jamaica. The importation of bananas by Messrs. Wessels & Co., of No. 218 Washington Street, are also very extensive.

About 800,000 are received from Aspinwall, the most of which are consigned to Messrs. Frank Brothers, of 232 Fulton Street, New York.

Messrs. E. Hawkins & Co., of 99 Barclay Street, are also active and enterprising importers, and transact a large and constantly increasing traffic in this luscious fruit. They have two large steamers which were built expressly for their trade, and they have every facility for supplying their customers with fruit promptly and satisfactorily.

The receipts of red bananas from Baracoa amount to 900,000 bunches, and this trade is controlled by Messrs. Gomez & Pearsall, of 168 Front street, and Hypolite Dumois, of 41 South Street.

The loss while the fruit is in transit is equal to twenty per cent., and yet bananas sell at a most reasonable price and are within the reach of the poorest people.

Something like forty steamers are engaged in bringing the fruit to this market, and during the busy season hundreds of men are employed in handling them in their various stages of distribution before they reach the retailer. Immense amounts of capital are invested in the trade, but it requires a thorough knowledge of the business to make it successful and profitable. The distribution is not only in the metropolis and its vicinity, but also includes cities and villages thousands of miles from the seaboard, and they depend chiefly for their supplies upon New York.

The value of the bananas annually received at this market is estimated at over four and one half millions of dollars.

Of cocoanuts the supply somewhat exceeds thirteen and one half million nuts. These are extensively used by manufacturers of dessicated cocoanut, confectioners, pastry cooks, the large hotels, restaurants, and first-class caterers and bakers. The loss on cocoanuts while in transit is equal to about eight per cent.

HANDKERCHIEF EXTRACTS.

Much and well justified complaint has been made that the handkerchief extracts offered for sale are neither as fine, lasting or agreeable as those we bought years ago. Many of the best known perfumers seem to depend more upon their reputation of what they have done than upon the quality of the goods they now offer the public. To get a really good article in these days is a rarity. We were therefore specially gratified to find in one of our drug stores a most excellent extract which was well blended, of fine odor and lasting, put up by Wm. H. Brown & Bro., of Baltimore, who are manufacturers of fine perfumery and toilet soaps, making a large variety of triple and quadruple extracts, colognes, toilet waters, and other goods in this line. If they keep up to their present standard they will soon control the bulk of this trade. The public demands, and is willing to pay, for really first class goods, and cannot long be put off with names of manufacturers on bottles which contain goods vastly inferior to those which made these names known.

"DIDN'T KNOW IT WAS LOADED."

The young man fell dead!

A friend had pointed a revolver at him.

"He didn't know it was loaded!"

We often hear it stated that a man is not responsible for what he does not know. The law presupposes knowledge, and therefore convicts the man who excuses crime by ignorance!

"If I had only known," has often been an unfortunate man's apology for some evil unknowingly wrought, but in a matter of general interest—as, for instance, that laudanum is a poison, that naphtha is a deadly explosive, that blood is heavily charged with a winter's accumulations of the waste of the system,—it is one's duty to know the fact and the consequences thereof. Our good old grandmothers knew, for instance, that the opening of spring was the most perilous period of the year.

Why?

Because then the blood stream is sluggish and chilled by the cold weather, and if not thinned a good deal and made to flow quickly and healthfully through the arteries and veins, it is impossible to have good vigor the rest of the year. Hence, without exception, what is now known as Warner's Log Cabin Sarsaparilla, was plentifully made and religiously given to every member of the family regularly through March, April, May and June. It is a matter of record that this prudential, preventive and restorative custom saved many a fit of sickness, prolonged life and happiness to a vigorous old age, and did away with heavy medical expenditures.

Mrs. Maggie Kerchwal, Lexington, Ky., used Warner's Log Cabin Sarsaparilla "for nervous sick headache, of which I have been a sufferer for years. It has been a great benefit to me." Capt. Hugh Harkins, 1114 S. 15th St., Philadelphia, Pa., says "it purified my blood and removed the blotches from my skin." Mrs. Aarea Smith, Topton, Berks Co., Pa., says she "was entirely cured of a skin disease of the worst kind," by Log Cabin Sarsaparilla. Bad skin indicates a very bad condition of the blood.

If you would live and be well, go to your druggist today and get Warner's Log Cabin Sarsaparilla and take no other,—there's nothing like it or as good,—and completely renovate your impaired system with this simple, old-fashioned preparation of roots and herbs.

Warner, who makes the famous Safe Cure, puts it up, and that is a guarantee of excellence all over the known world. Take it yourself and give it to the other members of the family, including the children. You will be astonished at its health-giving and life-prolonging powers. We say this editorially with perfect confidence, because we have heard good things of it everywhere, and its name is a guarantee that it is first-class in every particular.

NUTRITIOUS FOOD.

Of all the salts connected with the vital processes, none are so important as the phosphates. They enter into the composition of the bones, muscles, nerves, brain, and wherever indeed an important function is to be performed, there is invariably present a supply of phosphates. They are present in all the forms of substantial food. If food be deficient in phosphates, it is less nutritious; this significance of the phosphates is a well-recognized physiological truth. Some forms of food vary in the amount of phosphates they contain; and in the separation of bran from flour, we lessen its value as a source of nutritious food, in some degree proportioned to the phosphates which are withdrawn. This fact attracted the attention of Professor Horsford, some years ago, and led to many researches and exhaustive experiments in the direction of providing for the restoration of the phosphates to the food of every day life, in some practicable and economical manner. It was thus that his idea was conceived of producing a preparation that contained in itself the required phosphates, and also the power to act as a superior substitute for cream tartar, ordinary baking powders, etc., for the purpose of raising bread, biscuit, etc., thus replacing in the flour the vital principle of which it has been deprived, in a simple and inexpensive manner. The subject was made a life-study with him, and no one will begrudge him the wonderful success that attended his efforts.

TEMPERATURE AND HEALTH.

That the human body is, to a certain extent, a thermometer, is familiar to everyone who has suffered from rheumatism in the lower limbs. The preponderance of deaths in the chill hours of the early morn over those in the warmer and more cheerful portions of the day, is a second illustration of the subtle relationship between temperature on the one side and health and life on the other. A proper understanding of this relation enables us to avert disease and to enjoy all those blessings which are based upon physical well-being. The normal temperature of the body is a trifle less than 100° Fahrenheit. If it goes over this point, death by fever results; if below, death by exhaustion, or syncope, is bound to ensue. The heat of the body should exceed that of the atmosphere by about 25 degrees. If the figure falls below this, as in tropical lands, lassitude and aversion to activity are invariable consequences. If it exceeds this figure, as in Labrador, Finland and Lapland, the energy of the system is lost in making heat and not enough remains for physical development and intellectual activity. This may be one reason why no great men have ever appeared in either very hot or very cold countries. So far as science can see, it is impossible for a high genius to appear in the polar or subpolar and the equatorial lands. Existence, mere brute existence, requires all the force which the body generates, and naught is left for the intellectual and moral work, which characterizes the ideal man and woman.

Health is similarly dependent upon temperature. The body conforms itself to the conditions of the weather about it, but conforms slowly as the weather changes. In the passage from summer to autumn, from fall to winter, it is profoundly affected by sudden falls of the thermometer, and coughs and colds are notorious consequences. So, on the other hand, when the snow melts and spring rains begin to prepare the earth for the husbandman, the body is for the time being unable to meet the new series of conditions, and bilious fever, consumption, dysentery and liver complaint desolate the household in every direction. For this reason every vicissitude in the weather is marked upon the mortality tables of the state, and equally for this reason does the wise physician send his patients to the Bermudas, Florida, southern California, and the Riviera, where the climate varies but little from one end of the year to the other.

Yet this dependence, so vital to human welfare, is not absolute. Through modern science it has been reduced to a minimum and, in fact, practically destroyed. It has been found that the changes in the weather have no influence upon the organization when the latter is in perfectly sound and pure condition, and that its evil effects are proportional to the humors contained in the system. Thus, for example, a man whose blood is a mass of impurities leaves a heated parlor and goes into a cold street through which a brisk breeze is blowing. That night a terrible cold develops, and the next day pneumonia or bronchitis has appeared in its worst form. Or a woman in evening dress, whose system is full of humors, leaves a crowded ball room in March and drives home in her close carriage. Before morning, fever exhibits, and at sunrise she is undergoing all the misery of sick headache or bilious colic.

In both cases the physician is called in, and suffering, misery, expense and loss of time result. If, however, the sufferer had been in good condition, no trouble would ever have occurred.

To put the system into this condition, all that is required is to cleanse the blood of the impurities which render disease possible. This may be easily and thoroughly done. Chemistry has discovered a series of compounds which, on the one side, tend to purify the blood and, on the other, stimulate the great excretory functions to increased activity. Skilled physicians have combined these substances and thus produced preparations which act upon every organ and attack every kind of humor. Of the many articles of this class the best is the Sarsaparilla made by Dr. J. C. Ayer & Co., of Lowell, Mass. This is a simple but scientific combination of Honduras sarsaparilla, yellow dock, podophyllin and stillingia, with the invaluable alterative double iodides. It is pleasant to the nostril and palate, refreshing and helpful to the assimilative system and invigorating to the nerves. It stimulates the kidneys, liver, spleen and the great lymphatic system, and so accelerates the removal of all foreign and detritic matters from the blood. Its use is accompanied by no pain, nor even unpleasant circumstances, but with a largely augmented action of all the excretory functions and a corresponding purification and amelioration of the blood, and through the blood of the entire system itself. He who uses this superb production of modern science can safely defy all changes of the weather and rest assured of perfect health through all the varying seasons of the year.

BLIGHTED PROSPECTS

are largely the result of improvidence and lack of enterprise. Those who look out for the good chances, get on; such people are fast learning that they can live at home and make $1 and upwards per hour at work for us, in our new line of splendid business. All who take hold are started free by us. All ages, both sexes. Any one can do this pleasant, easy work. Those who are ambitious and enterprising will write at once and learn all; no harm will be done if you do unwisely conclude not to go to work. All is free. Address Stinson & Co., Portland, Maine.

ACID PHOSPHATE.

The term "acid phosphate" has to some ears a mysterious sound, suggesting an ancient alchemist laboring over his retorts and crucibles in a vain attempt to discover the elixir of life or the philosopher's stone. Nothing, however, could be further from the truth than this impression. "Acid phosphate" is merely the colloquial expression or contraction of acid phosphate of lime, one of the most valuable and necessary substances in the entire animal kingdom. Its importance and value are easily perceived when it is remembered that it constitutes a very large portion of our bones and teeth and enters into the composition of the nerves, brain, blood and the vital organs. Its manufacture is simple in the extreme. Thoroughly burned bones from which all tissue and carbonaceous matter have been carefully calcined are treated with dilute sulphuric acid until an acid phosphate of lime, white, clean and pure, results. This is ground, bottled and packed, making a finely palverulent, homogeneous, snowy and pure substance. Thus made it is a valuable addition to the kitchen and the *materia medica*. As the acid element of baking powders, it produces a bread ingredient of the highest virtue, one that supplies the entire organization with the necessary amount of phosphorus without which disease and death are bound to ensue and with which health, strength and activity go hand in hand. The necessity of acid phosphate has long been recognized by the chemist and the physician. This recognition has obtained commercial expression in numerous preparations, all claiming to be pure and well made, but varying in intrinsic worth from the highest to the lowest proportions. Some are well made, but poorly ground and bottled. Others are well ground, uniform and attractive, but poorly made and of inferior quality. A third-class are dangerous from having been made with sulphuric acid containing free sulphur, lead, bismuth, arsenic, or antimony. Another class is inferior because the bones have not been properly cleaned and calcined. The consequence is a powder which contains dirt, organic matter and empyreumatic bodies which may be inert, but which may be deleterious. Still another class combines the evil elements of the two preceding and may be safely termed absolutely worthless. These poor preparations are the work of ignorant rather than dishonest men. They are produced by people who enter the business with a little capital and with no knowledge of chemical or medical science. They do the best they know how and conscientiously advertise their goods as being first-class in every respect. It is to be regretted that their name is legion and that their output is found in every market. A wise buyer, whether he be physician, apothecary, manufacturer, hotel keeper or householder, will buy only those acid phosphates which are prepared by chemists of high standing, whose guaranty is proof of the excellence of their goods. There are many such in the market, but the finest and most reliable is that prepared by the United States Chemical Company of Philadelphia. It is made from the best quality of bones that after being carefully selected, cleaned and calcined, have been scientifically treated with sulphuric acid, drained, dried, pulverized and screened. When finished it makes a white, uniform, sweet and beautiful powder.

A HANDY BOOK.

The second volume of Alden's Manifold Cyclopedia comes fully up to the publisher's promises described by us in noticing the first of the series. This work is, in many ways, unlike any other cyclopedia. It undertakes to present a survey of the entire circle of knowledge, whether of words or of things, thus combining the characteristics of a Cyclopedia and a Dictionary, including in its vocabulary every word which has any claim to a place in the English language. Its form of publication is as unique as its plan—the "Ideal Edition" its publisher calls it—and the popular verdict seems to sustain his claim. It certainly is delightfully convenient.

LEA & PERRINS' SAUCE.

Lea & Perrins', the original and genuine Worcestershire Sauce, has been before the public over a half a century." Like all popular favorites it has long been the standard of comparison and the pattern for counterfeiters who not being able to imitate its excellence offer to the public imitations in bottling, labels and style of putting up. They dare not counterfeit the signature of Lea & Perrins which is on the red label of every genuine bottle, and of which this is a facsimile.

Lea & Perrins

To be sure of obtaining the genuine article, see that the above signature is on the label.

DYE FROM WASTE IN SOAP MAKING.

Science has done much and is doing more every day to bring into use waste products which have hitherto been thrown out or run down the sewer. There is less waste now in manufacturing industries than there was a year ago, and doubtless this will go on year by year as science steps in and points out ways and means of utilizing products that formerly had seemed to be valueless. An instance of this kind was published by the AMERICAN ANALYST in its issue of the 1st October, when it brought before its readers intimation of an invention of the eminent soap and oil chemist of this city, Mr. George Hutchison, for the production of a fine pale yellow soap from the waste residues obtained in the refinement of cotton oil. The consequence is that by means of this process it has been found possible to produce a fine pale soap, suitable for all purposes, fulling, scouring, laundry and even for the toilet, at a minimum cost of, say, less than two cents per pound, after allowing for all expenses in the manufacture. Not only is this process applicable to cotton soap stock, but to olive oil soap stock, off-colored tallow and greases of all sorts, by which these latter named may be brought to the purest white, and that at a very trifling cost. As proof of this, Mr. Hutchison's process is in practical use with many of our largest and best known soap makers, who are turning out by its aid a highly presentable product. It has also been taken up by many of the leading soap makers in England, who have proved its success. Another scientific achievement of this gentleman is the production of a beautiful brown dye from the residues in soap making, and which would otherwise be allowed to run away as valueless. Samples of the dye, and wool that have been dyed with it, have been submitted, and certainly are all that can possibly be desired. The colors are fast, and can be graduated to every possible shade of brown according to the preparation or mordant used. The above are matters of the greatest importance; but when it is taken into consideration that this dye can be produced at a fractional cost from waste material, the probabilities are that it will at no distant date come into general use for the production of "browns" of all shades to the exclusion of some that are now in use. This invention will certainly prove to be of interest to those engaged in the textile and dyeing industries, as brown is a very favorite color in all shades and largely used in carpets. At the same time it may be equally interesting to the soap maker as a means of increasing his income, and the woolen manufacturer who makes soap for his own consumption.

JENSEN'S PEPSIN TABLETS.

Dr. J. Fisher, of Germany, has just discovered that this Pepsin will cure most cases of Catarrh. Patients who simultaneously suffered from Dyspepsia and Catarrh, were also relieved from the latter complaint by using these Tablets—thereby proving that perhaps most cases of Catarrh are favored or caused by Dyspepsia or Indigestion. For speakers or singers this Pepsin is invaluable, as it dissolves all unhealthy gatherings in the throat and renders the voice pure and clear.

Viburnum Compound is composed of Viburnum opulus, Dioscorea villosa and Scutellaria lateriflora, with a combination of aromatics.

The Plymouth Rock Pants Co. are now the second largest receivers of SEALED letters in the city of Boston, and second only in receipt of money orders. As shippers of parcels by express they rank *first* in New England. They also send through the Boston Post Office the largest quantity, by weight, of merchandise by mail. This shows the wonderful popularity this Company is enjoying.

$10 REAL VALUE FREE!



Our new stamping outfit is **free** to every reader of this publication; it contains **100** perforated stamping patterns and includes a great variety of all sizes that are wanted. This outfit is a real work of art; no stamping outfit has ever been offered heretofore, on which anything like so much artistic ability was brought to bear. With each outfit is A BOX of BEST STAMPING POWDER, PAD, AND BOOK of INSTRUCTIONS, giving full directions for stamping, tells how to make the **powder** and stamping **paint,** contains instructions for **Lustre, Kensington** and **Hand painting,** tells colors to use in painting—red, white, blue, yellow, pink and other flowers; also contains hints and instructions on other matters, too numerous to mention. Bought singly, or a few patterns at a time, at usual prices, the equal of the above would cost **$10.** Although it is **free,** yet this is the **Regal Queen of Stamping Outfits** and on every hand is acknowledged to be superior, yes, very much superior, and very much more desirable than those which have been selling for **$1** each and upwards. By having **200,000** of these outfits made for us, during the dull season, we get them at first cost, the manufacturer was glad to take the order, at cost, that his help might be kept at work. All may depend that it is the very best, most artistic and in every way desirable outfit ever put before the public. Farm and Housekeeper (monthly, 16 large pages, 64 long columns, regular price 75 cents a year) is generally acknowledged to be the best general agricultural, housekeeping and family journal in America; it is entertaining and of greatest interest, as well as useful; its contributers embrace the widest range of brilliant talent. Furthermore, we have lately become managing owners of that grand monthly, **Sunshine, for youth; also, for those of all ages whose hearts are not withered;** 16 large pages, 64 long columns, regular price 75 cents a year. Sunshine is known favorably as the best youth's monthly in America. The best writers for youth, in the world, are its regular contributors; it is now quoted all over the world as standing at the head. Both papers are splendidly illustrated by the best artists. We will take 200,000 **trial year** subscribers at a price which gives us but a moderate portion of the **cost.**

FREE! Furthermore, every trial year subscriber, for either of the papers will receive **free** by mail our new **100** pattern Stamping Outfit. Trial year subscriptions will be received for either of the papers as follows: **1** subscription and **1** outfit, **32** cents; **2** subscriptions and **2** outfits, if sent at one time, **55** cents; **4** subscriptions and **4** outfits, if sent at one time, **$1.** For $1 send a dollar bill, but for less, send **1-cent** postage stamps. Better at once get three friends to join you, at 25 cents each; you can do it in a few minutes and they will thank you; papers will be mailed regularly to their separate addresses. While **trial year** subscribers are served for much **less than cost,** it proves the rule that a very large proportion of all who read either paper for a year, want it thereafter, and are willing to pay the regular price of 75 cents a year; through this, as time rolls on, we reap a profit that satisfies us.

FREE! The trial year subscriptions are almost **free,** and this the **Regal Queen of Stamping Outfits**—the best ever known—is entirely **free.** It is the greatest and best offer ever made to the public. **Large sizes** of patterns—every size that can be desired is included; all other outfits surpassed, by this, the best, the most artistic, the **Regal Queen.** Below we give a list of a few of the patterns; space is too valuable to admit of naming all: 1 Poppies for Scarf, 7 1-2 inch; 2 Tidy design, 7 1-2 inch; 3 Splendid Tinsel design, 8 inch; 4 Golden Rod, 4 inch; 5 Pond Lilies; 6 Pansies; 7 Moss Rose Buds; 8 Tube Roses; 9 Wheat; 10 Oak Leaves; 11 Maiden Hair Ferns; 12 Boy; 13 Girl's Head; 14 Bird; 15 Strawberries; 16 Owl; 17 Dog; 18 Butterfly; 19 Apple Blossoms; 20 Calla Lily; 21 Anchor; 22 Morning Glories; 23 Japanese Lilies; 24 Rabbit; 25 Bunch Forget-me-nots; 26 Fuchsias; 27 Bell Drops; 28 Fan; 29 Clown's Head; 30 Cat's Head. **70** other splendid patterns are included in this **Regal Queen** of stamping outfits—in all **100** patterns. Safe delivery guaranteed. Possessing this outfit any lady can, without expense, make home beautiful in many ways, can embroider childrens' and ladies' clothing in the most charming manner, and readily **make money** by doing stamping, Lustre, Kensington and Hand painting for others. A good stamping outfit is indispensable to every woman who cares to make home beautiful. This outfit contains patterns for each and every branch of needle work, flower painting, etc., and the **Book of Instructions** makes all clear and really easy. This outfit will do more for HOME and LADIES than many times the amount of a trial year subscription spent otherwise; no home should be with out it. The beautiful designs of this REGAL QUEEN of outfits ARE ALL THE RAGE wherever seen; when ever one or two reach a locality their fame spreads, and many TRIAL YEAR subscriptions usually follow. Many who have paid from **$1** to **$2** for outfits and were satisfied until they saw our designs, have secured our outfit and laid aside forever the others. Those who subscribe will find the papers well worth several times the trifling cost of a trial year subscription, and the majority will make up to us the loss, that this year we incur, through such a low price, by continuing subscribers, year after year, at the regular price, which all will be willing to admit is low enough. The money will gladly be refunded to any one who is not fully satisfied. Address, GEORGE STINSON & CO., BOX 356 Portland, Maine.

UNCOVERED.

We will print your name and address in American Agents' Directory, for only **12** cents in postage stamps; you will then receive great numbers of pictures, cards, catalogues, books, sample works of art, circulars, magazines, papers, general samples, etc., etc., UNCOVERING to you the great broad field of the great employment and agency business. Those whose names are in this Directory often receive that which if purchased, would cost $20 or $30 cash. Thousands of men and women make large sums of money in the agency business. Tens of millions of dollars worth of goods are yearly sold through agents. This Directory is sought and used by the leading publishers, booksellers, novelty dealers, inventors and manufacturers of the United States and Europe. It is regarded as the standard Agents' Directory of the world and is relied upon: a harvest awaits all whose names appear in it. Those whose names are in it will keep posted on all the new money making things that come out, while literature will flow to them in a steady stream. The great bargains of the most reliable firms will be put before all. Agents make money in their own localities. Agents make money traveling all around. Some agents make over ten thousand dollars a year. All depends on what the agent has to sell. Few there are who know all about the business of those who employ agents: those who have this information make big money easily; those whose names are in this Directory get this information FREE and complete. This Directory is used by all first-class firms, all over the world, who employ agents. Over 1,000 such firms use it. Your name in this directory will bring you in great information and large value; thousands will through it be led to profitable work, and FORTUNE. Reader, the very best small investment you can make, is to have your name and address printed in this directory.

Address, AMERICAN AGENTS' DIRECTORY, Augusta, Maine.

$93 Sewing Machine Free!

We want one person in every village, town and township, to keep in their homes a line of our ART SAMPLES; to those who will keep and simply show these samples to those who call, we will send, free, the very best Sewing Machine manufactured in the world, with all the attachments. This machine is made after the SINGER patents, which have expired. Before the patents run out, this style machine, with the attachments, was sold for $33; it now sells for $50. Reader, it may seem to you the most WONDERFUL THING ON EARTH, but you can secure one of these machines ABSOLUTELY FREE, provided your application comes in first, from your locality, and if you will keep in your home and show to those who call, a set of our elegant and unequaled art samples. We do not ask you to show these samples for more than two months, and then they become your own property. The art samples are sent to you ABSOLUTELY FREE of cost. How can we do all this?—easily enough! We often get as much as $2,000 or $3,000 in trade from even a small place, after our art samples have remained where they could be seen for a month or two. We need one person in each locality, all over the country, and take this means of securing them at once. Those who write to us at once, will secure, FREE, the very best Sewing Machine manufactured, and the finest general assortment of works of high art ever shown together in America. All particulars FREE by return mail. Write at once; a postal card on which to write to us will cost you but one cent, and after you know all, should you conclude to go no further, why no harm is done. Wonderful as it seems, you need no capital—all is free.

Address at once, TRUE & CO., AUGUSTA, MAINE.

A RICH PRESENT FOR YOU!

We have purchased for one-fourth the original actual cost, a large quantity of elegant Papeteries, each one filled with the very choicest quality of **Fashionable Linen Note Paper and Envelopes,** in beautiful assorted tints, with pens, penholder, sealing wax, etc., to match. The regular retail price of some of these Papeteries is $3.00, others are worth $1.50 to $2.50 each, while the cheapest one has never been sold at less than 40 cents, and a great bargain at that price. They are all very handsome and really valuable. We shall, for the next two months, send one of these Papeteries, carefully packed and fully post-paid, to every one who sends us **ONLY ONE DOLLAR** to pay for a full year's subscription to **DRAKE'S MAGAZINE.** The best Papeteries will be sent to those who subscribe first, and it will be **"First come best served."** All subscriptions will begin with the latest number out. **DRAKE'S MAGAZINE** is 64 pages and handsomely bound, each number is complete in itself, and has from 15 to 25 handsome illustrations. It has special departments to interest ladies and children, and entertaining matter for everyone. Every article in it is written expressly for it by the best authors. No other magazine of equal value is sold at less than 20 cents per copy, or $2.00 per year, yet we will send you **DRAKE'S MAGAZINE** a whole year and a **BEAUTIFUL PAPETERIE** filled with fashionable Stationery, all for **One Dollar.** A one dollar bill will go safely in the mails. Cut this advertisement out. It may not appear again. Address, **DRAKE'S MAGAZINE,**

31 Mercantile Exchange. New York City.

P. D. & CO., SELF-POURING

(Royle's Patent.)

TEA-POT.



Pours out the Tea by simply pressing the lid, as illustrated. Does away entirely with the drudgery of lifting the Tea-Pot. Saves at least 25 per cent. of Tea, or brews the Tea proportionately better.

SAMPLE LETTER.

SCRANTON, PA., *December* 13, 1887.

Messrs. Paine, Diehl & Co., Philadelphia:

GENTLEMEN—The Self-Pouring Tea-Pot was received several days since. It had received several dinges, but nothing to interfere with its working. It is a capital idea and works to a charm. Enclosed please find check for bill.

Yours truly, EZRA H. RIPPLE,
Mayor of Scranton, Pa.

Manufactured by

PAINE, DIEHL & CO.,

PHILADELPHIA, PA.



BATES' WAIST

Mrs. E. M. VAN BRUNT,

DRESS + REFORM + PARLORS,

39 East 19th St., N. Y. City.



Hygienic and Artistic Underwear for Men, Women and Children.

FALL AND WINTER

Jersey-fitting Undergarments in Silk, Jaeger Wool, and Merino. In stock or made to order.

Good-Sense Waists for all ages. Breakfast Corsets, Dr. Warner's Health Corset, Jackson Waist, Mme. Clark Corset, Corset for Thin Women, Skirt and Stocking Supporters, Abdominal Bandages, Double V Waists, Sanitary Towels, Bustles, Dress Reform Waists, Comfort Waist Corsets of all brands. Send for *Dress Reform Quarterly*, mailed free. Dress Reform Patterns. Orders by mail a specialty.

J. HENRY HENTZ. J. P. ROBINETT. J. HENRY HENTZ, Jr.

ESTABLISHED 1793.

WHITE, HENTZ & CO.,

SOLE PROPRIETORS OF

Trimble and Pennsylvania Monogram Whiskies.

222 and 224 NORTH SECOND ST., PHILADELPHIA.

D. LIEBER, 17 South William St., New York. Col. H. A. SELIGSON, 1200 Pennsylvania Ave., Washington, D. C.

A BUSINESS BENEFIT.

ADVANTAGES TO ADVERTISERS OFFERED BY THE AMERICAN ANALYST.

It has not the limitations of a daily paper. No one reads yesterday's paper. A monthly lives at least a month, while a semi-monthly is fresh twice a month, and its audience is not limited by geographical lines, but the circulation is all over the United States and Canada.

It contains matters of interest to everyone, especially the ladies of the household, and is, therefore, sure of a careful perusal. Our audiences are intelligent and of the better classes, who have money to spend, and any well worded advertisement in our columns, giving real information, will receive a careful perusal.

Our rates are as low as our circulation affords. Large circulation and original matter cost money, and those advertisers who desire to realize these benefits must expect to pay reasonably for them.

Advertisements in our columns are permanent. Most of our subscribers bind their numbers.

Our advertisements are set up in an attractive form, sure to call the attention of the reader.

Anything that our readers want, or for which a demand is to be created, not wholly of a local nature, will pay to advertise with us.

We take only advertisements from legitimate houses of really meritorious goods, and give them all the editorial assistance they deserve; consequently our readers knowing this, have confidence in advertisements contained in our columns.

The fact that we have the best and largest houses in every branch of trade advertising with us, and that they always renew as their seasons arrive, proves beyond a doubt that they have found the AMERICAN ANALYST a good advertising medium. Why should not you?

CALIFORNIA

Fine Table Wines

From our Celebrated Orleans Vineyard.

Groad, Barwsthy & Co.

Producers of the

ECLIPSE

CHAMPAGNE,

530 Washington St.

SAN FRANCISCO.

PARK & TILFORD. New York, C. JEVNE & CO., Chicago, Agents.

OUR SPECIALTIES ARE

Choice Bottled Ciders

—AND—

Pure Cider Vinegar,

For Hotel and First-Class Trade.

T. P. ROGERS & SON,

370 to 376 Washington Street,

NEW YORK.

"ROYAL" SALAD DRESSING,

PURE AND WHOLESOME.

Always Fresh, does not turn Oily or Rancid.

"ROYAL" WORCESTERSHIRE SAUCE,

The Peer of American Manufacture.

PURITY. TRADE MARK EXCELLENCE.

"CROWN" CELERY SPICES, TOMATO CATSUPS.

Pure Flavoring Extracts, Etc.

HORTON, CATO & CO.,

SOLE PROPRIETORS & MANUFACTURERS,

DETROIT, MICH.

ESTABLISHED 1872.

GELATINE.

JAMES CHALMER'S SON'S

Transparent Gelatine.

PURITY—STRENGTH.

Best for Family Use.

Jellies, Blanc Mange, Etc.

ACKNOWLEDGED BY EVERY ONE EQUAL TO THE BEST.

Natural Lithia Water.

FARMVILLE LITHIA WATER

FROM VIRGINIA.

—Not only Relieves, but—

CURES

Bright's Disease, Kidney Troubles of all Kinds, Rheumatism, Rheumatic Gout, Dyspepsia, Bladder Troubles, Diabetes, Calculi, Albuminuria. Without Taste or Odor. An Unapproachable Record in Results.

Sold by HAZARD, HAZARD & Co., Fifth Avenue Hotel, and other first-class Pharmacists. Pamphlet free upon application.

FARMVILLE LITHIA SPRINGS CO.,

298 Broadway, New York, and Philadelphia.

TORSION BRAIDED WIRE MATTRESSES

AND PILLOWS.

THE BRAIDED WIRE MATTRESS

complete in itself, requiring no hair or other mattress or spiral springs or woven bed bottom.

It cannot absorb odors, become musty or retain perspiration or disease germs, the covering being so arranged that it can be removed and washed.

It is as soft and fresh as feathers or any other material, and cannot become heated, as each slight movement changes the air beneath, while the temperature can be regulated by placing over it any desired amount of covering.

As a luxury nothing can surpass it, especially in warm weather.

No material is used that will attract bugs, moths or other insects.

No dust can be collected and retained to puff out through the covers when bedding is shaken or beaten. To secure an absolutely comfortable, sweet and pure resting place for the body during nearly one-third of the natural life which is spent in bed, is one of the most important objects of thought and care, for upon healthful sleep depend all the successes and pleasures of our waking hours.

Send for Circular.

THE TORSION BRAIDED WIRE UPHOLSTERING CO.,

No. 1017 Chestnut Street,

PHILADELPHIA, PA.

All Postmasters will receive subscriptions for the **AMERICAN ANALYST.**

OUR MISSION.

WHAT THE AMERICAN ANALYST IS DOING.

FIGHTING ADULTERATION.

The steadily growing favor which the AMERICAN ANALYST is constantly receiving at the hands of both the reading and the business public is the best evidence that could be afforded of the useful field of effort it occupies. It was the pioneer journal in this country to take up the fight against adulteration, and stands to-day, by public acknowledgment, the only competent exponent of the principles involved in that momentous struggle. To this end the realm of sophistication and fraud has been thoroughly explored, and its corruptions, as far as practicable, exposed to the public view. Charlatans, adulterators, and handlers of poisonous food have been summarily and uncompromisingly dealt with. Humbugs seeking to enrich themselves, through the sale of high-sounding specifics for human ailments, have been subjected to the crucial test of thorough chemical analysis of their goods, and where the latter, as too frequently occurred, proved to be utter frauds in name, composition, and pretended effects upon the system, the real facts have been placed before our readers in order to save the public from further unconscious imposition. The veil of chemical mystery in which tricksters of this kind ostentatiously envelop their processes of manufacture, protects them as yet from the criminal laws to which other confidence operators are held amenable, and the only method for counteracting their nefarious schemes is through public exposure by the newspaper press. In exposing this species of fraud, the AMERICAN ANALYST has conferred a benefit upon the community, to which the latter is giving grateful and substantial recognition.

SANITARY AND FOOD REFORMS.

In addition to the foregoing, the AMERICAN ANALYST is in constant co-operation with the Boards of Health of this and other cities, in efforts to secure sanitary and food reforms through organized methods, and while it is nobody's mouthpiece, it is conceded to be the only popular medium through which those bodies can bring their purposes and action intelligently before the general public. Reaching as it does all classes, manufacturers, merchants, physicians, chemists and private families all over the land, its influence is exerted over a vast radius, producing results as visibly marked as they are widespreading.

HOUSEHOLD MATTERS.

"Domestic Dietetics" is a department of special interest to ladies. It is very different and far superior to the ordinary cook book in that it tells the housewife suggestively what to buy, what foods are in season, as well as how to prepare the many varieties of dishes, all in a practical way easily followed. Other matters of great interest to housewives are also discussed.

PRACTICAL DISCUSSIONS.

Numerous other interests are also faithfully represented in our columns, such as the regular series of articles entitled, "Some Every Day Suggestions," relating to common experiences of society, the question of hygiene, and an infinite variety of practical subjects. In short, the AMERICAN ANALYST always keeps abreast in giving the fullest information on all matters directly or indirectly in the line of its proper field.

SCIENTIFIC INVESTIGATION.

The business transacted in the office of the AMERICAN ANALYST does not by any means all come to the surface in the pages of the paper. Minute analyses of chemical compounds, careful assays of minerals, examinations of questionable oils or doubtful condiments, and the many subtle operations incident to laboratory work are constantly required of us by correspondents far and near, and the results in many cases are not publicly recorded. In this manner, the influence of the paper encompasses a vast radius, from every point of which we receive constant expressions of approval, verbally, and in more substantial shape.

SUBSCRIPTION $1 PER YEAR.

Considering the amount of practical information regularly embodied in its contents, together with the fact that the subscription price for an entire year is only one dollar we believe the day is approaching when the AMERICAN ANALYST will be regularly welcomed in every intelligent household in the land. Address,

ANALYST PUBLISHING CO.,
19 *Park Place, N. Y.*

Robert Gordon's
TRADE MARK.
SPICED ✣ SEA ✣ FOODS
(IN GLASS.)
OYSTERS, LITTLE NECK CLAMS, MUSSELL, SHRIMP, LOBSTER, Etc.,
Packed in 8 and 16 oz. Jars. Guaranteed to be strictly Pure.
MADE OF THE FINEST MATERIALS.
—ALSO,—
ROBERT GORDON'S CONDENSED CLAM CHOWDER,
In 3-lb Cans. Cheapest and Best in the Market.
MANUFACTURED BY
JONES, GORDON COMPANY, Limited
204 West Street, New York.

FAT
CORPUS LEAN *will reduce fat at the rate of 10 to 15lbs. per month without affecting the general health.* 6c. *in stamps for circulars covering testimonials.* S. E. MARSH CO., 2315 *Madison Sq., Philadelphia, Pa.*
MADE
ABSOLUTELY HARMLESS *simply stopping the FAT-producing effects of food. The supply being stopped the natural working of the system draws on the fat and at once reduces weight.*
LEAN

ESTABLISHED 1857.
J. H. CUTTER,
OLD
BOURBON AND RYE WHISKIES.
We are the Sole Owners and Proprietors of this Celebrated Brand of Whiskey.
C.P.MOORMAN & CO. LOUISVILLE, KY.
We Guarantee the Superior Quality and Absolute Purity of every Barrel of Whiskey sold by us under this Brand.

W. P. FESSENDEN, Agent for N. E. States, Maryland and Penn., 11 Central St., Boston.

THE OLDEST.
THE GENUINE EAU DE BOTOT BOTOT WATER
THE ONLY DENTIFRICE APPROVED BY THE ACADEMY OF MEDICINE OF PARIS. FRANCE.


FOR MORE THAN A CENTURY IN GENERAL USE IN EUROPE.
SOLE AGENT FOR THE UNITED STATES. FREDERIC REISET. 44 BEAVER STREET. NEW YORK.
THE BEST.

SEND
YOUR WIFE
THE
American ✣ Analyst.
$1.00 A YEAR.

"HUNTER'S INVISIBLE"
MEDICATED FACE POWDER.
An Exquisitely Delicate Preparation
For Beautifying the Complexion.
DELIGHTFULLY FRAGRANT. PERFECTLY HARMLESS.
Flesh, Pearl, Blonde and Brunette Tints.
The Closest Scrutiny Fails to Detect its Use!
25 CENTS EVERYWHERE. BEWARE OF IMITATIONS.

ESTERBROOK'S STEEL PENS
Leading Numbers 14,048,128 130, 135, 333, 161.


For sale by all stationers.
THE ESTERBROOK STEEL PEN CO., 26 John St., N. Y.
WORKS: CAMDEN, N. J.

Any Book published can be procured upon application to

THE AMERICAN ANALYST,
19 Park Place, N. Y.



Standard Blue of America.
MANUFACTORY ESTABLISHED 1858.
NONE GENUINE WITHOUT RED TOP AND BLUE BAND.
The only Blue that never Spots.

"BILLET"
are
Carefully Selected
French Sardines,
Packed in Choicest Olive Oil.
AT ALL LEADING GROCERS.

FANNY DAVENPORT.
A LETTER TO THE PUBLIC FROM THIS ACCOMPLISHED ACTRESS.

PROVIDENCE, April '91.

MY DEAR MADAM.—Fitful by accident I [illegible] your Cream, because the jar was so pretty, and on trying it found it one of the most delightfully refreshing thing I have ever applied to my skin. Most assuredly you have made a marvellous discovery, and one and all of our sex should heartily thank you. I find it is not only a refreshing, softening article for the skin at night, but for the day use also. Please send me some of the Skin and another jar of the Cream to the Brunswick, Boston, and believe me, very thankfully yours. FANNY DAVENPORT.

Mrs. Ayer's assurance of the efficacy of the Recamier preparations has brought these justly celebrated articles into universal use by all women, old and young. They are in no sense cosmetics, as evidenced by their winning the first prize at the American Exhibition, London, 1887. Mrs. Ayer kept them herself for years before she consented even to manufacture them for sale. The Recamier Cream and Lotion will remove pimples, blackheads, liver spots and all of the various imperfections which render their victims unlovely and repulsive, alike to men and women. Recamier Powder is the purest powder ever made. It will not rub off, and [illegible]. A sample will be mailed you free on application. Recamier medicated soap is the purest and best. Madame Patti, in a letter of recent date, declares it excels all others. Any woman wishing to preserve a healthy body, firm to the touch and fair to the eye, with the elasticity of youth well preserved into age, should sponge the entire body with Recamier lotion after the daily bath. Before all substitutes for the Recamier preparations, even though represented "just as good." Several women have been severely injured by these transparent imitations made to sell on the reputation of the genuine articles.

Subscriptions $1 per year. Now is the time to subscribe.

UNEQUALLED Ask your Grocer for, and insist on having, LEA & PERRINS' Sauce, "The Worcestershire." It is known throughout the whole civilized world as the Best and most Delicious Sauce. DELICIOUS.

SCOTCH MARMALADE, Jams, Fruit and Wine, Jellies, &c.
By James Keiller & Son, Dundee.
SCOTCH BISCUITS, Albert, Water, and Oat Cake,
By Robert Middlemass & Son, Edinburgh.
RACAHOUT des Arabes, by De Langrenier, Paris.
BAY WATER, West India, J. D. S. brand, in cases, one dozen bottles.
Sold by all first-class Grocers.
JOHN DUNCANS' SONS, 43 Park Place, New York. Agents for the United States.



BLAIR'S PILLS
Great English Remedy for Gout, Rheumatism and Kidney Complaints.
Sure, Prompt and Effective. Omit box 94, round box 74 pills.
At all druggists, and 224 William St., New York.

ALTHENE SKIN SOAP

An absolutely pure and perfect soap for all purposes of the toilet, nursery, bath or sick-room. Has the approval of leading chemists and physicians, and is recommended by all who have used it. Price 25 cts. a cake, or 65 cts. for a box of three. Can be obtained of the retail druggists or from

J. W. CAMPION & CO., 916 Filbert Street,
PHILADELPHIA.

GOLD Ten cents Two at home and make more money at work for us than at anything else in the world. Either sex; all ages. Costly outfit FREE. Terms FREE. Address, TRUE & Co., Augusta, Maine.



These Goods are "Par Excellence,"
Pure, Healthful and Reliable, warranted to give satisfaction in every particular. For sale by wholesale and retail grocers throughout the United States. VOLKER BROS., Manufacturers CLEVELAND and CHICAGO.

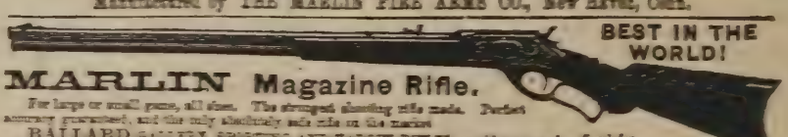
PROTECT YOUR HOMES!
MARLIN DOUBLE ACTION REVOLVER.

A GOOD REVOLVER no longer costs a Fortune



These revolvers are an exact duplicate of the celebrated SMITH & WESSON, .38 Caliber, using Centre-Fire Cartridges.

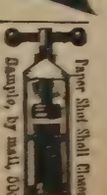
Self-Cocking, Automatic Ejecting,
FULL NICKEL PLATED, RUBBER HANDLE.
WARRANTED EQUAL IN EVERY RESPECT TO THE
SMITH & WESSON.
For sale by Hardware and Gun Dealers everywhere.
Manufactured by THE MARLIN FIRE ARMS CO., New Haven, Conn.



BEST IN THE WORLD!
MARLIN Magazine Rifle.
For large or small game, all sizes. The strongest shooting rifle made. Perfect accuracy guaranteed, and the only absolutely safe rifle in the market.
BALLARD GALLERY, SPORTING AND TARGET RIFLES, world renowned. Send for Illustrated Catalogue. MARLIN FIRE ARMS CO., New Haven, Conn.



IDEAL RELOADING TOOLS
WILL SAVE ONE-HALF THE COST OF AMMUNITION.
Made for all sizes of Cartridges which are used in any of the following Rifles or Pistols: Marlin, Colt's, Winchester, Ballard, Stevens, Remington, Whitney-Kennedy, Smith & Wesson; also for all gauges and makes of
SHOT GUN SHELLS, PAPER AND BRASS.
Cheaper and better than any other. Send for Price List of these tools to
Ideal Manufacturing Company,
Box 1064 G. New Haven, Conn.



NATRONA BI-CARBONATE OF SODA.

(ABSOLUTELY PURE.)

NATRONA



TRADE MARK

SODA

The nature of the raw material from which NATRONA BI-CARBONATE OF SODA is made—viz., kryolith, a mineral containing *pure sodium*—insures a purity and uniformity of product which cannot be obtained from any other known material. In making BI-CARB. SODA from any other raw material, the use of sulphuric acid is a necessity, but none is used in any part of the process of making NATRONA BI-CARB.; hence its entire freedom from the slightest trace of arsenic, which is always present in ordinary soda. Its absolute purity and entire freedom from all traces of *sulphate of soda*, common salt and other impurities, render NATRONA BI-CARB. NEARLY TASTELESS, and being bolted through the finest bolting-cloth, insures the finest stage of division.

To these indisputable facts the attention of CONSUMERS of soda is specially called. They are IMPORTANT, and should influence both those who use and those who sell soda, to buy and sell NONE BUT THE BEST.

The NATRONA BI-CARB. Soda is kept in stock by almost every wholesale druggist and grocer throughout the United States, of whom it may be ordered.

Natrona Bi-Carb. Soda is unequaled by any other brand of English or American Manufacture.

PENNA. SALT MANUFACTURING CO.,

NATRONA CHEMICAL WORKS. PHILADELPHIA, PA.

CARNRICK'S SOLUBLE FOOD

FOR INFANTS AND CHILDREN.

For Mothers, Invalids, Dyspeptics & Aged People.



THE ONLY FOOD *that digests as easily as human milk, and agrees with all infants and children.*

THE ONLY FOOD *that thoroughly nourishes the child without the addition of cow's milk.*

THE ONLY FOOD *that removes from infancy all necessity, danger and annoyance of a wet nurse.*

TAKEN BY MOTHERS *once or twice a day the quantity of milk will be increased and quality at once improved.*

IF THE CHILD IS RESTLESS, *change partially from nursing to* **SOLUBLE FOOD.**

DR. STUTZER, Food Analyst for Rhenish Prussia, says: "CARNRICK'S SOLUBLE FOOD is the best of all the foods I have ever examined."

"OUR BABY'S FIRST AND SECOND YEARS," by Marion Harland. Book of 64 pages, giving careful instructions for bringing up the little ones. Sent free by

REED & CARNRICK, N. Y.



LADIES

Enamel your Ranges twice a year, tops once a week and you have the finest-polished stove in the world. For sale by all Grocers and Stove Dealers.



GOLD MEDAL, PARIS, 1[illegible]

BAKER'S

Breakfast Cocoa.

Warranted *absolutely pure Cocoa,* from which the excess of Oil has been removed. It has *three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup.* It is delicious, nourishing, strengthening, easily digested, and admirably adapted for invalids as well as for persons in health.

Sold by Grocers everywhere.

W. BAKER & CO., Dorchester, Mass.

Sura Cura

ROBINSON'S SURE CURE FOR

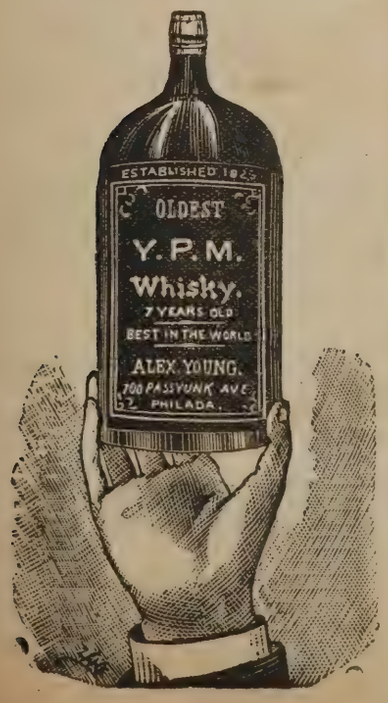
RHEUMATISM

And NEURALGIA,

And remedy for diseases arising from an impure state of the blood. An antidote for **MALARIA.** Price 50 c. and $1. Sent by mail on receipt of price. Send for Circular.

R. W. ROBINSON & SON,
184 Greenwich Street,
NEW YORK.

Sura Cura



ESTABLISHED 1823.

ALEX. YOUNG CO., Limited

DISTILLERS OF

Y. P. M. WHISKIES

DISTILLERY,

Nos. 408, 410, 412 and 414 South Street.

MALT HOUSE,

416, 418, 420, 422 and 424 South Street,

STORE,

No. 700 Passyunk Avenue.

PHILADELPHIA, PA.

ARMOUR & CO.

CHICAGO, ILLS.

PACKERS OF

Pork and Beef Products

CANNED MEATS,

ETC.,

FOR HOME CONSUMPTION AND FOR EXPORT

TO ALL PARTS OF THE WORLD.

Also,

SHIPPERS OF

Choice Dressed Beef,

MUTTON AND HOGS,

In Refrigerator Cars,

To BOSTON,
NEW YORK,
PHILADELPHIA,
BALTIMORE,

And other cities throughout the country.

GILBERT S. GRAVES

STANDARD

STARCH.

MANUFACTURED WITH ENTIRELY NEW MACHINERY AND BY LATEST IMPROVED PEROCSS.

IT IS GUARANTEED to be fully equal to BRANDS SOLD AT FANCY PRICES, and MUCH SUPERIOR TO STARCH SOLD AT EQUAL PRICES.

THE MIRROR GLOSS

Is the finest Starch made for the Laundry, and cannot be excelled. It will not injure the finest Laces.

THE CORN STARCH

For culinary purposes is prepared with the greatest care, from selected Corn, and is a most delicious and wholesome article of food.

ASK YOUR GROCER FOR IT.

A DOSE OR TWO

WILL QUICKLY CURE

NERVOUS HEADACHE.



A Cure for Sick Headache.

A CURE FOR

SLEEPLESSNESS.

A CURE FOR

SEA-SICKNESS.

PURITY AGE STRENGTH

The "Best" Tonic

A Concentrated Liquid Extract

OF

MALT AND HOPS.

Invigorating

and

Nutritious.



INSURES

A

Healthy Appetite

—AND—

AIDS DIGESTION.

STRENGTHENS THE SYSTEM.

One of the Most Efficacious Remedies for Dyspepsia.

INDISPENSABLE FOR NURSING MOTHERS. THE MOST WHOLESOME TABLE BEVERAGE.

The "BEST" Tonic is manufactured from the Best Malt and Choicest Hops and neither Alcohol, Spirits nor Chemicals of any kind are used in its preparation.

MANUFACTURED ONLY BY

Specialty Department, **PHILLIP BEST BREWING CO.,**

Eastern Depot, 28 College Place, N. Y.

General Office, - - - - MILWAUKEE, WIS.

SWIFT'S

Choice Chicago Dressed Beef

—AND—

MUTTON.

CAN be found at all times in full supply and at popular prices at the branch houses in all the larger cities and is ***retailed by all first class butchers.***

The trade of all marketmen and meat dealers is solicited for our Wholesale Branch Houses, and the ***public may rest assured*** *that in* ***purchasing our meat*** *from dealers they will* ***always receive the best.***

SWIFT AND COMPANY,

UNION STOCK YARDS,

CHICAGO, ILLS.

Tabasco Pepper Sauce

OR LIQUID PEPPER.

Is simply the Pulp of the Ripe Pepper Extracted by Pressure.

The seed of this Pepper was obtained from Central America, and by careful cultivation in Louisiana for many years has been so improved in strength, flavor and aroma, as to have become a new variety of Red Pepper, superior to all others. The pulp is so handled as to retain all the flavor, strength, aroma and color of the ripe fruit, and to keep unimpaired in any climate. It excites the appetite, promotes digestion, and is pronounced, by connoisseurs, to be the finest condiment in the world. For medicinal purposes it recommends itself by its purity, strength and diffusible form.

Manufactured by E. McILHENNY,

NEW IBERIA, LA.

For Sale by all Wholesale Grocers.

ON THE USE OF PURGATIVES.

BY CHARLES A. HOFF, M. D., ST. LOUIS, MO.

Of all preparations contained within the *pharnacopœia,* there are none, apparently, held in higher esteem by mankind than that class of medicines, commonly known as purgatives. The busy practitioner confidently prescribes them with variable frequency, singly and combined, from the date of the writing of his very first prescription to that of his last; and the corner druggist rarely sees a day pass over his head on which he does not greet the customer who has called around to get "something to act upon his bowels." Indeed, the inevitable purgative awaits the tiny baby screaming in its first attack of colic; it is resorted to by the invalid weighted down with years of suffering and disease; and it is by no means despised by the individual in robust health, when assailed by the various petty ills, which even the most vigorous seldom entirely escape.

Notwithstanding the fact that purgatives are so generally prescribed by the physician, and so frequently resorted to without advice by the patient, they are not altogether incapable of doing harm. As everybody knows, the habit of purging the system repeatedly with salines, cholagogues, hydragogues, or drastics, is a most pernicious one; and the physician who fails to exercise a proper care, both in the selection and the administration of cathartics will sooner or later bankrupt the health of his patients as well as his own hard earned reputation.

Constipation is a complication of so many disorders, a symptom of so many diseases that its treatment in different cases depends upon very different considerations. For a simple, ordinary attack, the average doctor has been accustomed to use a simple purge, such as castor oil, sulphate of magnesia, rhubarb, senna, aloes, colocynth, blue pills, etc.; yet in none of these, can it be truly said, has there been found all that could be wished for, even in so simple a matter as a laxative. Where can we find the physician who has not been vexed and annoyed at the complaints of his patients against the purgative medicines he has been accustomed to prescribe. Some people there are who can not or will not swallow pills; many object to the nauseating castor oil; not a few oppose the use of salines since they are disagreeable both in taste and effect; many look upon all resinous cathartics as objectionable on account of their so called heating properties; aloes is objected to in pills and especially in pregnancy; elaterium is said to be excessively harsh and severe, croton oil is known to be dangerous; podophyllin causes an undue amount of griping; blue mass is avoided on general principles; and so on to the end of the chapter.

Fortunately, however, the physician of the present need no longer be placed in a dilemma when called upon to prescribe a preparation free from the faults enumerated in connection with ordinary purgatives. The pharmacist has bravely come to his aid with a formula of incomparable excellence; and this preparation, a combination of "manna, purified cathartic acid and fruit juice," although but recently brought to the notice of the medical world, is, nevertheless, already regarded as a most valuable addition to the resources of medicine.

The happy thought that suggested the combination known as the Rio Chemical Co.'s Acid Mannate justly challenges unlimited admiration and esteem, and has thus far evoked from the profession an almost universal verdict of commendation and praise. Prompt, mild and certain in its action, Acid Mannate may well be considered an ideal remedy in the constipation of pregnancy. Being pleasant to the taste, and continuing its good work without increased dosage, it is pre-eminently adapted to cases of habitual constipation. Indeed, in its wide range of adaptability as an aperient medicine it is impossible to exaggerate its importance, or allude either directly or indirectly to the vast variety of its beneficial, therapeutical properties.

The importance of laxatives is probably nowhere appreciated so much as in the constipation of pregnancy; and it is to this fact, no doubt, more than to any other, that Acid Mannate owes its great popularity and fame among remedial agents. The testimony of thousands of honorable medical gentlemen leading us to believe that, through the beneficent effect of this same elegant formula, constipation need not hereafter, as in the past, be regarded as one of the most troublesome attendants upon gestation. Moreover, the atrocious female pill of unknown composition but of dire effect, which has deluded the drug market for ages, we may consider as having had its day; and it is to be hoped that, since the physician is now in possession of a purgative especially suited to the period of gestation, female life will be less frequently harassed by the ails and aches said to be peculiar to the sex; and that miscarriages, displacements, granular erosions, congestions, headaches, dyspeptic and hypochondriacal attacks, and the whole long train of aches, pains and nervous ills will grow less familiar to the medical profession in the same ratio that the physician increases his familiarity with the actions of Acid Mannate.

A full sized bottle of Acid Mannate will be sent free to any Physician who desires to test it, if he will pay the express charges and mention this Journal, on application to the

RIO CHEMICAL CO.,
St. Louis, Mo

GORDON & DILWORTH

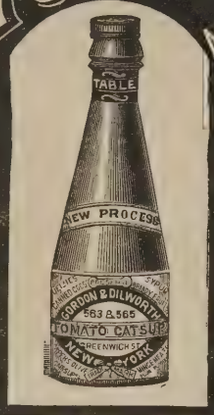
MANUFACTURING PURVEYORS

Established 1847

ALIMENTARY PRODUCTS

ALL OF OUR PRODUCTIONS BEAR THIS TRADE MARK

WE WILL PROSECUTE ALL INFRINGEMENTS & IMITATIONS







CHOICE PRESERVES & DESSERTS

OVER 100 DOMESTIC & FOREIGN FRUITS AND VEGETABLES TRANSMUTED INTO TABLE DELICACIES

PRICES ON PRESERVED FRUITS REDUCED 1ST DEC. 1885

PRESERVED; CANNED & BRANDY FRUITS; FRUIT-JELLIES; VEGETABLES; TOMATO-CATSUP; SYRUPS & JAMS; SALAD DRESSING; BLACKBERRY BRANDY; MINCE-MEAT; PLUM PUDDING; SWEET PICKLES; OLIVES & CAPERS; WINE-JELLIES; MARMALADE; SOUPS, SAUCES &c.

SOLD BY THE LEADING GROCERS ON THE AMERICAN CONTINENT.

QUINA-LAROCHE

A STIMULATING, RESTORATIVE AND ANTI-FEBRILE

VINOUS ELIXIR

OF THE THREE CINCHONA BARKS.

A most powerful restorative in all cases where Cinchona is indicated,

As MALARIA, EXHAUSTION, SLOW CONVALESCENCE, GENERAL DEBILITY, Etc.

LAROCHE'S QUINA possesses in the highest degree the restorative and invigorating qualities of Cinchona, which is the best known medicine for giving tone to the digestive organs. It succeeds completely in removing LANGUOR, WEAKNESS, WASTING DISEASES, WANT OF APPETITE, and for FEVER AND AGUE IT IS ONE OF THE BEST SPECIFICS.

FOR SALE BY ALL DRUGGISTS.

E. FOUGERA & CO.,

PARIS, 22 RUE DROUOT. Sole Agents for the United States.

D. G. Cook, Pres.

AMERICAN WINE CO.,

ST. LOUIS.

COOK'S IMPERIAL



Press House and Wine Cellars, SANDUSKY, OHIO.

Office and Salesroom, Wine House and Vaults, 3015 TO 3021 CASS AVE.

Pure Still Wines.

GREENWAY'S PORTER

—AND—

DOUBLE AND EXTRA DOUBLE STOUT.

GREENWAY'S INDIA PALE ALE.

IN GLASS OR WOOD

ENGLISH TRADE MARK.

SEND FOR CIRCULARS.

FULLY EQUAL TO THE BEST IMPORTED. FOR FAMILY OR CLUB USE. RECOMMENDED BY OUR BEST PHYSICIANS FOR SALE BY ALL FIRST CLASS GROCERS AND DEALERS.

THE GREENWAY BREWING CO.

SYRACUSE, N.Y.

Greenway Bottling Co.,

BOTTLERS OF

GREENWAY BREWING CO'S BRANDS OF ALE, PORTER, DOUBLE STOUT

—AND—

Germania Brewing Co's Standard Pale Crown Lager & Culmbacher.

N. Y. Depot, 31 Broadway.

Established in London, 1831.

DEAN'S PATENT

ARDENTER MUSTARD.

BEST IN THE WORLD.

WARRANTED ABSOLUTELY PURE.

PATENT OFFICE UNITED STATES OF AMERICA 1871

WARRANTED ABSOLUTELY PURE.

Ardenter Mustard Pellets

—FOR—

Dyspepsia and Indigestion.

UNIVERSALLY recommended and prescribed by physicians. The medicinal property are English mustard seed coated with pepsin and sugar. You will find it will relieve you after using two or three doses. It is very beneficial for Heartburn, Sour Stomach and Headache. They are a beautiful confection for children. Each bottle contains full directions.

W. G. DEAN & SON,

361 and 363 Washington Street, 84, 86 and 88 North Moore Street, New York.

—THE—

CHRISTIAN MOERLEIN

Brewing Co.,

CINCINNATI, U. S. A.,

Brewers of the far-famed

"NATIONAL" EXPORT

(The Queen of Beers)

LAGER.

Owing to its absolute purity, beautiful pale color, fine aroma and nutritious qualities, the above beer has become the PRIME FAVORITE in all the principal hotels and clubs, and in thousands of families throughout the West and South.

Pure LAGER BEER,

"IMPERIAL" and "CULMBACHER"

Brewed & Bottled SPECIALLY FOR HOTELS, CLUBS AND PRIVATE FAMILIES

—BY—

Beadleston & Woerz

291 W. 10th St. New York.

Orders by Postal Card promptly attended to.

H. CLAUSEN & SON

BREWING CO'S

CHAMPAGNE LAGER BEER,

ROYAL EXPORT LAGER,

EAST INDIA PALE ALE,

EXTRA AMERICAN STOUT.

Bottled for Family Use and Export by

PHŒNIX BOTTLING CO.

888 and 890 Second Avenue,

Bet. 47th and 48th Streets

NEW YORK.

Order from your Grocer, or direct from us.

FULL WEIGHT PURE

DR. PRICE'S CREAM BAKING POWDER

MOST PERFECT MADE

Its superior excellence proven in millions of homes for more than a quarter of a century. It is used by the United States Government. Endorsed by the heads of the Great Universities as the Strongest, Purest, and most Healthful. Dr. Price's Cream Baking Powder does not contain Ammonia, Lime or Alum. Sold only in cans.

PRICE BAKING POWDER CO.
NEW YORK. CHICAGO, ST. LOUIS.

N. K. FAIRBANK & CO'S
FAIRY SOAP.

A PERFECTLY PURE WHITE FLOATING SOAP.

DESIGNED EXPRESSLY TO USE IN TOILET, BATH AND NURSERY.

Admirably adapted to every requirement of the Household.

DAINTY AND DELICATE FOR ALL WASHING PURPOSES

For sale by all First-class Grocers and Druggists.

N. K. FAIRBANK & CO.,

CHICAGO, ST. LOUIS, NEW YORK, OMAHA.



Subscriptions $1 per year. Now is the time to subscribe.

PEACOCK'S BROMIDES

(SYR: BROM: COMP: PEACOCK)

NERVE SEDATIVE.

Each fluid drachm represents 15 grains of the Combined C. P. Bromides of Potassium, Sodium, Calcium, Ammonium and Lithium.

USES:—EPILEPSY, and all CONGESTIVE, CONVULSIVE, and REFLEX NEUROSES.

This preparation has stood the test of time and experience, and can be relied upon to produce results, which can not be obtained from the use of commercial bromide substitutes.

DOSE:—One to two FLUID drachms, in WATER, three or more times a day.

PEACOCK CHEMICAL CO., St. Louis.

CARL L. JENSEN'S
CRYSTAL PEPSIN TABLETS

FOR DYSPEPSIA OR INDIGESTION.



CARL L. JENSEN'S CRYSTAL PEPSIN has been known throughout the world for the last ten years among the medical profession only. But a medical preparation of such high value as this could not be kept exclusively within the power of the physicians without permitting the public to become familiar with CARL L. JENSEN'S CRYSTAL PEPSIN, which they have so often seen mentioned in prescriptions from their physicians, and from which preparations they have received such gratifying results. That the public have availed themselves of this knowledge is manifested from the fact that the demand at the drug stores of late for CARL L. JENSEN'S CRYSTAL PEPSIN has become so urgent that we have been repeatedly requested by the Druggists at large to put up the PEPSIN in a more convenient form for their customers who demand JENSEN'S CRYSTAL PEPSIN without bringing a prescription. This PEPSIN, to suit the prescription department, is put up in loose Crystals or Scales, and therefore not in a suitable manner to be handled by the public. It is therefore, for the convenience of the public, prepared in tablet form, of which one or two constitute a dose, and put up in small bottles of convenient form to be carried in the pocket, each bottle containing seventy-five tablets.

CARL L. JENSEN,
SOLE MANUFACTURER,
2039 Green Street, Philadelphia, and 161 West 23d Street, New York.
KEPT BY ALL DRUGGISTS.

RUBY ROYAL "SEC."



This wine, of a bright crimson or Ruby color, possesses exceptional merit in all the characteristics of dryness, mellowness of flavor, and delicacy of fragrance. It is the only red champagne in the market, and can be tried at the Hoffman House, Delmonico's and other first-class places.

Sold by the Leading Grocers.

Good Agents

To obtain Subscriptions for

AMERICAN * ANALYST

WANTED ON LIBERAL TERMS.

WE solicit an investigation of our system and methods, and will gladly send to any one very interesting matter on the OPIUM HABIT, DRUNKENNESS and their effects and cure. Physicians specially invited to examine, and if desirous of trying our remedies, liberal arrangements will be made with them. Prompt and frank attention to correspondence. The remedies are put up safely in stout boxes and sent masked. Full directions sent.

THE LESLIE E. KEELEY CO., Dwight, Illinois.

EXPERIMENT STATION
UNIVERSITY OF ILLINOIS

AMERICAN ANALYST

FOR THE

FAMILY AND CONSUMER.

A SEMI-MONTHLY ADVOCATE OF PURE FOOD AND THE SUPPRESSION OF ADULTERATION.

Office, 19 Park Place.

[Entered at the Post Office at New York, as Second Class Matter.]

VOL. IV.—No. 8. NEW YORK, APRIL 15, 1888. Whole No. 80

CONTENTS.

Answers to Correspondents 158
Beer Preservatives 155
Book Reviews 165
Breathed Air 159
Business Notes 165
Curious Theory 156
Disinfection 161
Domestic Dietetics 163
Editorial 158
Alleged and Actual Facts—Alum Baking Powder—Oats and Whiskey—Stupidity Rampant—Equilibrium of the Sexes—Tea and Temperance—Fraudulent French Brandy.
European Dishes 163
Every Man His Own Landlord 157
French Cooks in New York 164
Gasoline 163
Helen's Escape—Chap. I. 153
Home Sanitation 161
India Rubber—(Concluded) 162
Man's Food 165
Our Daily Food 156
Pepsins 159
Preservative Agents in Beer 155
Pure Groceries 157
Scotch Oats Essence 162

HELEN'S ESCAPE.

IN FOUR CHAPTERS.

CHAPTER I.

Ping! crash! and, shattered into a thousand pieces, down came the bust of Molière which stood at the top of the book-case in my room at No. 5 Rue de Douai, Paris. This was on the evening of May 27, 1871, and the Commune was desperately gasping its last breath in the ubiquitous presence of the victorious Versailles troops of Macmahon.

"Better the bust of Molière than my head," I remarked to myself as I quitted my easel, at which I was trying to work, and went to the window to peer into the street. The scene which met my furtive gaze through the half-opened *persiennes* I can never forget. Almost under my window—for No. 5 was but the third house from the corner of the street—was what had been a large and well-constructed barricade, composed of street stones piled around a Clichy-Odéon omnibus, a couple of night-carts, and a miscellaneous heap of obstructions—its front facing the Rue Laval, its two sides commanding the Rue Pigalle, and its rear towards the Rue de Douai. All about it were stretched the corpses of men, in blue or white blouses of hybrid uniforms, who had fallen during the night; and against the walls of the opposite houses were half a dozen wretches slowly dying from their wounds, and calling aloud to be put out of their misery. Everywhere else, rifles, accoutrements, shattered fragments of the barricade, empty wine bottles, and—blood.

I had been a close prisoner in the house for four days; I had been made to assist in the construction of the barricade described above, in spite of my plea of "Civis Britannicus sum;" but I had determined not to fight, and, favored by darkness and the drunkenness of the Communist sentries, had managed to slip home unobserved. The bullet which had destroyed Molière was the first which had fairly entered my room, although, during the three preceding days, there had been severe fighting in the street, and my *persiennes* were riddled almost to fragments. I had only ventured to look out once before, for the fate of those who looked out of window dangled before my eyes in the shape of two or three motionless heads and arms hanging over window ledges; but the arrival of the bullet stimulated my curiosity, and I remained, lying flat on the balcony, peeping through the iron work of its railing. There were not more than a score of men left in the dilapidated barricade, and these were either too drunk or too desperate to fly. About four hundred yards up the Rue Laval I saw a blue mass, tipped with steel, which I guessed to be the Versailles troops advancing from their capture of the Buttes Chaumont and the Belleville heights, to the destruction of what was almost the last hornet's nest. Presently there was a tremendous volley; the men in the barricade yelled and crouched down, rose up and fired. Then the street was filled with white smoke; but I could hear the clatter of feet advancing at the *pas gymnastique*, followed by yells of defiance, cries of agony, the crash of falling obstacles, and more volleys. The smoke cleared, the "Reds" were rushing along the street past my door, followed by the cheering troops. Now and then, a man threw up his arms and fell flat on his face; the others staggered on; there were more cries of agony, which told me that the bayonet was doing its sickening work. Then all was over, and the Commune was dead as far as fighting was concerned, although the lurid glare reflected on the evening sky in half a dozen directions, sufficiently proclaimed that it had not died without a terrible Parthian shot.

We—that is, my Italian landlord and I, the only occupants of a house usually filled from basement to attics with artists and art students—had not an atom of food or a drop of drink in the house; and I determined to get as far as the *charcutier* at the corner—now opened for the benefit of the Versallles sentries grouped all about—for the purpose of taking in supplies. So I crept out cautiously—for I knew that the victors, maddened by resistance and bloodshed, would not hesitate to shoot upon mere suspicion—bought what I required, and returned, having been absent half an hour.

It was half dark when I reached my room again, and the weird gray light which came from the west, and made a strange pattern on the floor as it pierced my battered *persiennes*, seemed an appropriate tint for the close of such an awful day. I felt its influence, and, safe as I was, moved gently, as in a house of death. Then I was amazed to see a man sitting, or rather lying, in my arm-chair. When I approached nearer, I saw that he was wounded and insensible; that his face and his left arm were bound up in bloody rags, and that his tattered clothing was besmeared with mud and chalk and blood. I poured some brandy down his throat, and he revived. "Thank God!" he exclaimed—"thank God!" But he was so exhausted that his head sunk back again. He had uttered those words in English, and, astonished as I was to find him in my room at all, I was still more so when I saw he was a fellow countryman.

Presently he made an effort and sat up. "You're all right," I said, as I noticed he looked fearfully and anxiously around, as if pursued; "you'll be better when you've had something to eat and drink."

His face brightened at the sound of my English speech. "You are an Englishman," he said. "I am glad. These brutes have nearly done for me. Look here!"—as he spoke, he undid the the bandage from his hand—"that's a bayonet wound." As he showed it, a piece of glass fell from his sleeve or his bandage to the ground. Seeing it, he added: "And I had to jump clean through a window. But I'm safe here? You won't give me up?"

"Oh of course I won't," I replied. "Why should I?"

"Well, you see I'm a banker here. I heard that the Commune had made a raid on more than one business house for what they call 'contributions to the holy cause of universal liberty.' I happened to have a lot of securities which had been deposited with me for safety by wealthy Parisians. I heard that the Communists were on the scent, and I escaped with them just in time. The soldiers entered the house just as I left it, chased me, fired at me, wounded me in the head and hand, and I got into a shop. I was followed there, fired at again, and just jumped through the window in time to avoid an ugly push with a bayonet. But I'm not quite comfortable, for they might be here at any moment."

His mind was evidently unhinged by what he had gone through; for, in spite of my assurances that the Commune was a thing of the past, and that order was re-established, whilst he ate and drank with avidity what I set before him, at every unusual sound he started to his feet in the greatest alarm. However, food and drink gave him courage; and although he refused to have his wounds dressed, and remained with his face almost hidden in hideous bandages, he accepted my invitation to remain where he was for the night. Over a cigar and a bottle of Médoc I found him to be an exceptionally intelligent and well informed man, who had been at an English public school and university, and had been settled in Paris many years. Personally, he said, he was ruined by the Commune; but he was glad to have been able to save the property of his clients, and had no doubt but that they would make him some compensation for the losses he had sustained in guarding their interests.

He refused to occupy my spare room, but preferred to sleep in my armchair; and at midnight, when we separated, he said:

"My name is Rayne—Dixon Rayne, of the firm of Rayne & Company, Rue le Pelletier. I don't know how I can ever repay you adequately for your kindness to me to-night; but be sure that I shall endeavor to do so."

When I entered the room the next morning, he was gone.

Now, there were two or three little things about Mr. Rayne and the circumstances of his escape, which, coupled with the fact of his sudden disappearance, struck me as being rather odd, and instinctively I felt rather relieved when he was gone. Of course his story was plausible enough, for I knew that the Communists had not hesitated to lay their hands upon all the money and valuables and securities they could find, under the plea of *pro bono publico*, but in reality for personal enrichment. But why he should have displayed such fear of arrest was strange, when he must have known that all cause for fear was removed by the triumph of the Versailles troops. Again, he did not ask my name, as a man in receipt of a kindness and wishful to repay it would generally do. Neither, upon searching the Directory for Paris, could I find any such firm as Rayne & Company, either in the Rue le Pelletier or out of it. Lastly, what little I could see of my visitor's face for the rags which he so assiduously preserved, did not impress me, although I knew very well that in a hurried flight for life, Apollo himself would assuredly be shorn of much of his natural beauty.

However, Mr. Rayne, good or bad, was gone, and there was an end of it, as I thought, and I was soon too busily occupied with my own affairs to trouble my head about him. Shortly afterwards, I ventured out for a tour of exploration amidst the ruins of defaced, despoiled Paris, perhaps also with a view to the reproduction upon canvas of such incidents as I had witnessed or could imagine. When I returned home, I found an official in my room. "Monsieur is English?" he asked.

I admitted the fact.

"Has Monsieur any countrymen of his in the house or anywhere about?"

I replied that I knew of none.

The official described himself as *désolated*, but it was his duty to search. Accordingly, he searched high and low, cupboard and drawer, passage and closet. "I am obliged to Monsieur," he said, as he re-entered my studio. Suddenly, he stooped and picked up from the floor the piece of glass which had fallen from Mr. Rayne's arm bandage; and I noticed that it was stained glass of a yellow color, such as may be seen sometimes in the staircase windows of Parisian houses, but never in a shop front.

The officer looked keenly at me as he held the glass, and his remarkable politeness at once gave way to an official abruptness which was evidently more natural to him.

"How did this come here?" he asked.

I suppose I must have looked almost guilty, for he repeated the question in a more peremptory manner, as I stood wondering how I should answer; so there was nothing to be done but to tell him all that had happened on the night of Rayne's arrival. After a series of minute questions concerning my visitor, the purport of which I could not guess, and my answers to which he carefully noted down, he left me.

I lit a pipe and pondered over this strange matter for an hour; then I thought I would go to breakfast on the boulevards. Close to the street door was a tall man in ordinary civilian dress, smoking a cigar, and apparently interested in the work of demolition of the barricade which was going on. He glanced carelessly at me, and I passed on; but on reaching the crossing at the church of Notre-Dame de Lorette, I looked round to see if the way was clear, and behold he was following me at a distance of fifty yards, and so on down the Rue Lafitte, on to the boulevard, and over to the Café du Cardinal, so that I knew I was being watched. The same man, unless he was disguised, was not engaged on the job again; but I seemed to feel instinctively that the eye of the law was on me, and some one was intrusted with the duty of observing my slightest movements.

Finally, to cut a long story short, I was visited by two gentlemen in mufti, although they were clearly officials, who drove with me to the depot of the Prefecture of Police, where I was submitted to a searching examination by a magistrate concerning Mr. Rayne, and allowed to go, after I had been actually thanked and apologized to for the trouble and inconvenience to which I had been put.

Piecing all the evidence together with the nature of the questions put to me, I came to the conclusion that Mr. Rayne must have been a political offender, or a spy, or perhaps even a Communist leader.

In three weeks' time I had cleared up my affairs in Paris, and after an unexpectedly prolonged sojourn in the city of famine and bloodshed, returned gladly enough to my own home amidst the Surrey hills.

(To be continued.)

ELECTRICITY AND PLANT LIFE.—Experience in the winter palace of the Czar at St. Petersburg, indicates that the electric light is injurious to the exotic plants used in the decoration of the rooms. Dr. Siemens lighted his greenhouse by electricity and found no detrimental results, which suggests the theory that the waste steam from the engine driving the dynamo, with which the greenhouse was heated, counteracted the evil effects of the light.

ASK YOUR GROCER FOR IT. USE NO OTHER.

IMPEROYAL Wheat, Buckwheat and Cereals.



BEST IN THE MARKET.

IMPEROYAL VACUUM COOKED OATS, WHEAT AND HOMINY

AND

Griddle Cake Flour.

M. D. STEVENS' IMPEROYAL NEW PROCESS REFINED FLOURS.

Require but one minute in preparation, without **Salt, Baking Powder or Yeast.**

18 MERCANTILE EXCHANGE,

NEW YORK.

DIRECTIONS ON EACH PACKAGE.

Can be used for all kinds of Pastry, Bread, Biscuit, Griddle Cakes, etc., and its absolute freedom from Alum, Terra Alba, or any injurious ingredient, make it a necessity in every household. No lady can afford to be without it.

SOLD BY FIRST-CLASS GROCERS.

MELLIN'S

TRADE MARK

CRAFT LABORA

FOR INFANTS & INVALIDS

FOOD

The Only Perfect Substitute for Mother's Milk.

A Copy of our Book,

The Care and Feeding of Infants

will be MAILED FREE to any address.

DOLIBER, GOODALE & CO.,

40-41-42-43 Central Wharf, Boston, Mass.

WINTER DIET.

A nutritious Diet for infants during the winter and spring months, has a very important bearing upon the ability of the little ones to withstand the strain of the heated term during the ensuing summer. NESTLE'S MILK FOOD, is noted for its nourishing properties and for producing firm flesh, hard bone, and tough muscle. Every prominent writer on infant's diet awards Nestle's food the first place. Each new compound put on the market in the past few years has either aimed at *imitating* Nestle's food or *attacking* it, thereby testifying to its superiority.

IMPORTANT

TO THE

MEDICAL PROFESSION.

Send your address to THE NEW YORK PHARMACEUTICAL COMPANY, BEDFORD SPRINGS, MASS., for Illustrative Hand-book, **FREE**, containing valuable formula, special directions, and the testimonials of one thousand physicians in favor of the great merits of

HAYDEN'S

Viburnum Compound,

IN FEMALE DISEASES.

Also, the

URIC SOLVENT,

For KIDNEY DISEASES, and complaints arising therefrom.

PRESERVATIVE AGENTS IN BEER.

BY C. A. CRAMPTON, ASSISTANT CHEMIST U. S. DEPT. OF AGRICULTURE.

[Taken from Report of the U. S. Dept. of Agriculture.]

(*Concluded from page* 136)

MINERAL ADDITIONS.

The presence of lead, copper or zinc sometimes observed in malt liquors is due, usually, to the use of brass faucets or lead pipes by the retailers in drawing off the liquor or in filling bottles. The amount of these metals taken up by acid liquors in this way is quite small usually, but may be considerable if they are long kept in contact with the metallic surface. Thus, the first glass drawn from a faucet in the morning is apt to contain considerable copper and zinc in solution. In Paris the apparatus used for drawing beer is subject to supervision, and a frequent cleansing and proper kind of material is insisted upon. The Brooklyn Department of Health issued an order in 1886 prohibiting the use of unprotected brass faucets in drawing beer, but its enforcement has not been insisted on.[1] Analyses made for the Board by Otto Grothe of ales drawn through pumps showed small quantities of copper, zinc and lead in every case.[2]

Alum is sometimes used as a clarifying agent in the brewing of beer. The method of detecting the presence of metals in liquors need not be dwelt on here. It is best performed in the ash from a large quantity of the suspected sample.

BICARBONATE OF SODA.

This salt is added to beer for the purpose either of correcting an undue acidity of the beer, resulting from improper brewing, or of imparting to it an increased "head," or content of carbonic acid gas, or for both purposes. The salt is decomposed by the free acid of the beer and the gas liberated, lactate and acetate of soda being left dissolved in the beer. This seems to be purely an American practice; at least I have failed to find any mention of it in European authorities. Some of them mention the use of marble dust or magnesia for the correction of acidity, but very little consideration is given to the subject; in this country, however, it seems to be very widespread. The following extracts are taken from a paper read by Otto Grothe, Ph.D., before the American Society of Public Analysts.[3]

1. Annual Report Dep't Health, City of Brooklyn, 1886, p. 87, and 1887, p. 63.
2. Ibid.
3. Ann. Rep. Dept. of Health, City of Brooklyn, 1885, p. 92.

The Health Department of the City of Brooklyn has for some time carried on investigations with reference to the brewing of lager beer as practiced in that city. The peculiar cathartic effect of some of the Brooklyn beers seemed to indicate the presence of some substitutes, principally for hops. The analysis of such suspicious beer failed, however, to reveal anything of importance, either on account of the absence of such substitutes or because the quantities of beer used were too small. Before going to the expense of purchasing a keg or two from each brewery for the chemical laboratory, Dr. Bartley thought it to be the best to have the breweries, in the first place, inspected. These inspections resulted principally in the discovery of a variety of substances used by beer brewers as clearing and improving agents, the latter being considered the most objectionable. They were sodium bicarbonate, tartaric acid, cream of tartar, isinglass, or gelatine, glucose, grape sugar, juniper berries, and salicylic acid.

Sodium bicarbonate is a substance more regularly used by brewers. * * * The opinion of the brewers about the necessity of this addition is very much divided; while some believe it to be utterly necessary, others say they would rather do without it, as it causes them a heavy expense. They all say, however, they cannot avoid it, because the public wants a perfectly neutral beverage. There is beer in the market which has no addition of bicarbonate. * * * The quantity of soda added varies very much, and we may say in proportion to the quantity of acid contained in the beer. This quantity of acid in the beer depends upon the knowledge and the attention of the brewer. Thus we find that breweries which have clean, well-ventilated and flushed cellars, in which refrigerating machines are in use, and which are conducted in a scientific way by an expert foreman, can afford to sell their product with less than one-third of the quantity of sodic bicarbonate used by smaller concerns which are not so well conducted and which have not the facilities of their larger competitors.

The largest quantity of bicarbonate used is about 2½ ounces to the keg, or quarter of a barrel. The size of a barrel varies from 31½ to 33 gallons, according to the age, the older kegs becoming smaller by the contraction of the wood. A keg, therefore, contains 8 gallons of beer, or 64 pints, which is considered equal to about a hundred glasses as sold in the beer saloons over the counter. A glass of beer, therefore, contains in some cases three-fourths of a gram of bicarbonate of soda; and as a moderate beer drinker will, under certain circumstances, for instance in hot weather, drink about twenty glasses of beer a day, he takes about 15 grams, or 252 grains of bicarbonate of soda with it. A heavy beer drinker—say a laborer who works outdoors and buys the beer by the pint—may consume as many as forty glasses a day, and he takes an ounce of bicarbonate of soda with it. The smallest quantity of bicarbonate of soda used in our breweries is one ounce to a half barrel, and the difference in the effect of that addition is a very remarkable one, the beer tasting slightly acid.

There cannot be any doubt that large quantities of bicarbonate of soda regularly introduced into the stomach are detrimental to the health. Inasmuch as the lager beer is used as a food by many people, it would be greatly appreciated by intelligent beer brewers and beer drinkers if the use of bicarbonate of soda could be regulated by the authorities, or, if possible, entirely abolished. By such regulations the unclean brewer would be compelled to either keep his brewery clean or go out of the business altogether. Such regulations should also be extended to the quality of the metals of the apparatus used in the different brewing processes, so that to the American lager beer the same name can be given as to the German beer, which Justus von Liebig called "liquid bread."

There are several rather misleading statements in the above. Dr. Grothe says in the first place that "the public wants a perfectly neutral beverage," which is

The Standard of Excellence.

KINGSFORD'S

OSWEGO

Pure and Silver Gloss



STARCH

KINGSFORD'S

OSWEGO CORN STARCH

FOR

Puddings, Custards, Blanc-Mange, Etc.

THE PERFECTION OF QUALITY.

WILL PLEASE YOU EVERY TIME.

Always ask your Grocer for these goods.

COLDEN'S LIQUID BEEF TONIC.

ORIGINAL LABEL:
"Colden's Liebig's Liquid Extract of Beef and Tonic Invigorator."

AN INVALUABLE AID IN THE TREATMENT OF ALL CASES OF DEBILITY.

Established 15 Years. Endorsed by Scores of Physicians. Essentially Different from all other Beef Tonics. Beware of Imitations.

COLDEN'S LIQUID BEEF TONIC consists of the Extract of Beef (by Baron Liebig's process), spirit rendered non-injurious to the most delicate stomach by extraction of Fusel Oil, soluble Citrate of Iron, Cinchona, Gentian and simple aromatics. An official analysis of this preparation by the eminent chemist ARTHUR HILL HASSALL, M. D., F. R. S., and an endorsement by SIR ERASMUS WILSON, F. R. S., is printed on the label of each bottle.

Its Range of Action Embraces all Cases of Debility.

By the urgent request of several eminent members of the medical profession, I have added to each wineglassful of this preparation two grains of SOLUBLE CITRATE OF IRON, and which is designated on the label as "No. 1," while the same preparation, without Iron, is designated on the label as "No 2."

It acts directly on the sentient gastric nerves, stimulating the follicles to secretion and gives to weakened individuals that first pre-requisite to an improvement, an appetite.

☞ *I will, upon application, send a sample bottle of* ***Colden's Liquid Beef Tonic*** *to any physician in regular standing. Please ask your Dispensing Druggist (if he has not already a supply) to order it. In prescribing this preparation physicians should be particular to mention "COLDEN'S" viz: "EXT. CARNIS. FL. COMP. (COLDEN). It is put up in pint bottles and can be had of Wholesale and Retail Druggists generally throughout the United States.*

C. N. CRITTENTON, Sole Agent,

115 Fulton Street, N. Y.

Please Mention the AMERICAN ANALYST.

open to considerable doubt; and again, "the smallest quantity of bicarbonate of soda used is one ounce to a half of a barrel, and the difference in the effects of that addition is a very remarkable one, the beer tasting *slightly acid.*" If this latter statement is taken in a strictly chemical sense, it is rather paradoxical, for a bicarbonate added to a liquid of course tends to make it alkaline. What is meant by its tasting slightly acid doubtless is that it acquired a pungency to the taste on account of the liberation of carbonic acid gas from the bicarbonate by the free acid existing in the beer. One of the beers I examined (No. 4816) was actually alkaline in reaction from excess of added bicarbonate, and the taste was far from being agreeable.

I would hardly take so decided a stand as Dr. Grothe in regard to the injury done to the health of the beer drinker by bicarbonate of soda *per se*. It may be necessary to explain to a non-scientific reader that the bicarbonate does not remain in the beer *as bicarbonate*, unless there is an amount added in excess of the quantity of free acid present in the beer. This free acid (mostly acetic in soured beers, but due chiefly to acid phosphates in normal beers), combines with the bicarbonate, setting free carbonic acid, and forming acetate of soda and basic phosphate, which remain in solution. The reaction is very similar to that which takes place in using baking powders for cooking purposes, except that in the latter case tartrate of soda and potash (Rochelle salts) is left instead of acetate and phosphate of soda. Where bitartrate of potash is added to the beer along with the soda (as sometimes occurs, according to the Brooklyn report), the reaction is precisely the same. In these days of the almost universal consumption of baking powders there is doubtless enough alkaline salts thrown into a man's stomach with his food without pumping them in with his drinks as well. At all events, there can be but little question of the propriety of prohibiting the use of bicarbonate of soda in beer. It is entirely unnecessary and foreign to the production or preservation of pure beer. Moreover, its use serves to cover up and hide the effects of poor brewing and improper storing or refrigerating, and should be prohibited from this cause alone if there were no other.

SALT.

A variable quantity of chloride of sodium is a normal constituent of all beers, being derived principally from the water used in the brewing. Even a slight further addition of salt might be deemed admissible to properly "season" the beer to the taste, just as breadstuffs are treated. Many brewers, however, are in the habit of adding a large quantity, either for the purpose of covering up some objectionable taste, or of increasing the thirst of the consumer. The English government places the limit of chloride of soda which might come from the normal constituents at 50 grains to the gallon, or about .086 per cent., and treats any excess of that amount as evidence of an improper addition. This standard is undoubtedly a very generous one. Dr. Engelhardt found quite a large number of the samples examined by him to overstep the limit of 50 grains to the gallon, one sample containing as high as .338 per cent. Of the samples examined here none were beyond it.

OUR DAILY FOOD.

HOW MUCH A MAN EATS EVERY TWENTY-FOUR HOURS.

It has been calculated that on an average each man who attains the age of three score and ten, consumes during the course of his life twenty wagon loads of food, solid and liquid. At four tons to the wagon, this would correspond to an average of about a hundred ounces of food per day, or say some one hundred and twenty ounces per day during adult life, and about eighty ounces during infancy and youth. Most modern doctors agree in regarding one hundred and twenty ounces of food per day, corresponding to five or six half pints of liquid food, and seven or eight pounds of solid food, as in excess of the real daily requirements of a healthy man or woman. Yet probably most of us take more than this, in one way or another, during the day. Dr. Lankester, from an extensive analysis of the dietary of soldiers, sailors, prisoners, and the better paid classes of artisans and professional men in London, found the average daily quantity of solid and liquid food to be one hundred and forty-three ounces. Doubtless many take much less, but unquestionably many take much more than this. When some one mentioned before Sydney Smith the twenty wagon loads of food calculated for each man's allowance, he turned to Lord Durham, who, like himself, was corpulent (and not without sufficient reason), with the quaint remark, "I think our wagons, Durham, must be four-horsed ones." There are members of the London Corporation, to seek no further, whose wagons must be six-horsed ones, and well loaded at that.—*Richard A. Proctor, in the Cosmopolitan.*

A CURIOUS THEORY.

UTILIZING FOOD AS A REFORMING AGENT IN PRISON DISCIPLINE

We read recently an account of one of the most interesting of recent experiments in food now going on in the California State Prison. California has established the Folsom State Prison among the hills near the head of the American River. The scenery is fine, the air pure and the water excellent. The convicts are chiefly employed in quarrying and dressing granite. The building is roomy, safe and substantial. It has the customary cells, bath and arrangements for securing ventilation. The inmates have their hair cropped and wear the usual distinctive prison garb. It is in the manner of supplying food that this prison differs from others. The convicts, when they first arrive, as well as those who show little inclination to work or a disposition to be vicious, are supplied with a rather poor fare, consisting largely of boiled beans, salt meat, cabbage, mush, common bread, and coffee served without milk. If not within sight of the table where this coarse food is served, there is within smell of it another on which fresh beef and mutton, various kinds of vegetables, rice, and on Sunday cake, syrup and tea, are placed. The convict learns that he can sit at this table and enjoy the food thereon if he works diligently and faithfully, conducts himself properly, and gives little trouble to the warden and his assistants. He also learns that those who sit at this table are allowed considerable liberty and are permitted to take walks after each meal. The desire to sit at this table is great. Men who do not like to work enjoy good living, and are generally willing to be at considerable pains to secure it. The inmates of this penitentiary ordinarily adopt such a course as will enable them to sit at the better table within a few months of their entrance. When taking their first breakfast at it, they perceive the odor of beefsteak, mutton chops, hot rolls, and fine coffee that proceeds from an adjoining room. They learn that there are roast beef and mutton, salads and puddings there for dinner; while for supper there are steaks, chops, fried potatoes, tea and several kinds of fruit. The price of admission to this table is strict attention to business, respect for all rules and regulations, and the constant observance of propriety. The food comes high, but most of the convicts are anxious to obtain it, and many of them do.

BURNETT'S
PERFECTLY PURE HIGHLY CONCENTRATED
Standard Flavoring
EXTRACTS

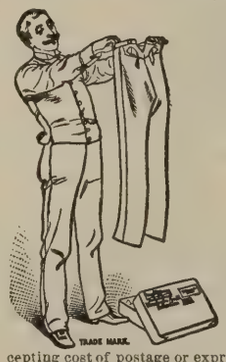
THE superiority of these Extracts consists in their
PERFECT PURITY AND GREAT STRENGTH.

There is no subject which should more engross attention than the purity of the preparations which are used in flavoring the various compounds prepared for the human stomach.

They are not only true to their names, but are prepared from fruits of the best quality, and so highly concentrated that a small quantity only need be used.

JOSEPH BURNETT & CO., Boston, Mass.

THE FAMOUS CUSTOM MADE
PLYMOUTH ROCK $3 PANTS
Full Suits and Overcoats
at proportionate prices.



Owing to the enormous number of mail orders received from New York City alone we have opened there a branch salesroom at **285 BROADWAY**, opp. **Stewart Building**, where our New York customers may call and be measured without the

DO YOU WEAR PANTS

trouble of writing us. But, if our goods are so desirable in **New York** surely they **must** be bargains to the customer in the country, where clothing is higher. These goods are within the reach of every one in the United States, all **at the same price**, excepting cost of postage or express. Upon receipt of 6 cents we mail 20 samples of cloth to select from, self-measurment blanks and a 48-inch linen tape measure. If you cannot wait for samples, tell us about what color you prefer, send us your waist, inside-leg and hip measures, together with $3.00, and 35 cents to prepay express or postage, and we will guarantee safe delivery and perfect satisfaction. **For any cause**, we refund money upon request, or make another garment if customer desires **The American Express Co.** (capital $20 000 000) will promptly reply to any inquiry sent their Boston office. Address all **mail** to us at Boston office

PLYMOUTH ROCK PANTS CO.,
18 Summer Street, Boston, Mass.

BIXBY'S BEST BLACKING
SHINES FOR ALL.



EVERY MAN HIS OWN LANDLORD.

A SUBJECT OF VALUE TO EVERY HOUSEHOLDER IN MODERATE CIRCUMSTANCES.

Extended and rapidly extending interest is being attracted in this section to the successful operation of the Building and Loan Association system, by means of which persons of moderate means are enabled to become the owners of their houses at about the same outlay as renting would otherwise cost them. These building associations are comparatively new in New York, notwithstanding that they originated in England about sixty years ago, and have been so successful that they have spread all over the world. England has 2,000 incorporated associations, with 500,000 members, and assets aggregating $200,000,000. Australia has associations with a capital of at least $25,000,000. Philadelphia was the first city in this country to adopt the co-operative building plan, and the miles of streets lined with neat, frame cottages that form the outskirts of the city are the result. It is estimated that over 50,000 houses are owned by workingmen in Philadelphia, and that 600 building and loan associations are in existence there to-day. From Philadelphia these associations have spread to every State in the Union. They are very popular in the West. Chicago and Buffalo have each 150 associations; Pittsburgh has 250; Cincinnati 200; Rochester has eighty, and nearly every small town in the vicinity of the large cities has from one to a dozen of these associations. The total number in the United States is estimated at 5,000, with a membership of 750,000, and an aggregate capital of $750,000,000.

The first organization in this vicinity was that of the South Brooklyn Association in April, 1886. It has now nearly $100,000 loaned to its members, and its shares command a premium of $15 each. There are about half a dozen associations in Brooklyn, and fifteen in this city. The first of these was the Harlem Association, which is one of the most prosperous in the country. It was organized in February, 1887, and in twenty weeks the limit of membership—600—was reached, and 5,000 shares of stock were taken up. It now has $91,000 loaned on bond and mortgage at 5 per cent., and has made a profit in premiums and interest of over $25,000. These associations are all formed on the same general plan. They are incorporated under the law of 1851, and are free from the corporation tax clause applying to savings banks. The membership is limited to 600, and a member can take any number of shares from two to sixty. The paid-up value of each share is $250, and is paid in by a subscription of 25 cents per share weekly. When a sum sufficient to warrant a loan has been received, a meeting is called, and the president offers one share of $250 to the highest bidder. The member willing to pay the highest premium gets the share, and as many more at the same rate as he desires. The premium that is bid is usually added to the amount needed to build or purchase the house. Thus a man wishing to build a house costing $3,000 in cash, and bidding a premium of $60 per share, would require sixteen shares, or $4,000, for which he would give a mortgage on the property. He would not be required to pay any cash down, but would pay his weekly subscription of twenty-five cents a share on the sixteen shares, or $4 a week, making $208 per year. He would also pay 5 per cent. interest on the mortgage, or $200 a year. This would make a total yearly payment of $408, and would pay off the mortgage in a little less than ten years. But this time and the total amount paid is considerably reduced by the profits made by the payment of the premiums. When the assets of the association are sufficient to pay $250 for each share of stock—which is usually in seven or eight years—the series is closed up. The members who have received loans are released, and have their property free and clear, and the others are paid $250 cash for each share.

Although the members of these associations are on the same footing, there are practically two classes—the lenders and the borrowers. In the beginning all are lenders until several thousand dollars are raised; then the ones willing to pay the most for the use of the money borrow. The higher the premiums are, the better for the members, who merely take shares as an investment, as they virtually obtain from 8 to 10 per cent. for their money. This high rate of interest is not such a hardship for the borrower as appears at first glance. It is about the same proportion as rentals are in desirable localities, and as the borrower obtains the money without having any security, and in a few years becomes the owner of the property, it is decidedly to his advantage. The associations have a clause providing for the withdrawal of members at any time. All of the money paid in is returned, and after the end of the third year from 20 to 60 per cent. of the profits is paid. This enables a member who becomes financially embarrassed to obtain money, and not forfeit what he has paid in, as is the case in the tontine insurance plan. A borrower, however, is fined when he allows his payment of interest on a mortgage to become over one month in arrears. When he is three months behind, he is liable to have the mortgage foreclosed, but even then what he loses would not exceed the rent that he would have paid during the same interval. Several instances in this city have occurred where houses have been built by loans from these associations, and before they were occupied, rentals have been offered that exceed the interest on the mortgages. They were accepted, and in a few years the houses will have paid for themselves, besides leaving a margin for the shrewd borrower.

Loans on property are usually made with one-third equity. That is, the lender will advance only two-thirds of the value. A man with a moderate income will wait a long time before he saves up the amount necessary to buy or build with. Then his property will be saddled with a mortgage that will be a burden year after year, without any prospect of a release. Even suppose that he had a kind friend who would lend him the amount he wanted for ten years without demanding the equity, the advantage of borrowing from the association is clearly shown. If the friend were to lend him $2,550 at 5 per cent. interest, his interest would amount to $127.50 per year, or $1,275 in ten years, and he would still owe the amount borrowed. If he were to borrow the same amount from the association, and pay a premium of $80 per share, he would pay the same amount, and be under no obligation to his friend. A loan from an association at a premium of $80 per share costs just 5 per cent. interest, provided that the association winds up in ten years. If it closes in less time, the amount will be proportionately decreased.

As an investment, a building association is better than a bank. They give a higher interest, and better security. For instance, if a man saving $1 a week takes four shares in an association, he will get $1,000 in the end. He will have paid ten years' assessments on four shares, or $520, and his net gain will be $480. If he pays $520 in a bank, he gets interest at 5 per cent. amounting to $47.35, and at the end of his ten years he has $567 to his credit, against $1,000 in the association, a balance of $432.65 in favor of the latter. He is secured by first mortgages on real estate, and there is no way that his capital can be wiped out. The officers of the association are under bonds that secure the safety of the funds in their charge. These funds are not large, as the loans are sold as fast as sufficient amounts accumulate. The loans are made on property which is found to have a clear title when searched by the association's attorney. Appraisers are employed to place a value on property before it is purchased, and when buildings are to be put up, full plans and estimates must be submitted.

The promoters of these associations claim that they are better than insurance policies, because their benefits are enjoyed in life; better than banks, because they cannot fail, and better than any other investment, because they are safer and pay better profits. They encourage the acquisition of individual homes, and tend to increase the prosperity of the masses. They induce saving, by giving workingmen, clerks, salesmen, etc., an object to work for. As a system of co-operation they are entirely in accord with American ideas, and if carried out as they are capable of being carried, they should do much to settle labor troubles, and put an end to Communistic and Socialistic doctrines.

PURE GROCERIES.

SUCH THINGS EXIST, BUT ARE NOT READILY FOUND.

"Rice, flour and white meal can be mingled with white pepper in reasonable quantities, and experts in spices cannot detect it," said a groceryman to a St. Louis *Globe* reporter the other day. "In truth, there is no trade in which adulteration for pecuniary profit can be carried on more profitably, and with less chance of detection than in spices. Terra alba, a fine marble dust, is exported from Italy to this country in considerable quantities, to mingle with white pepper. Mustard mixes with sago flour, rice flour and a bit of aniline coloring without detriment to the appearance of the mustard. Treat the mixture with iodine and you expose the adulteration, but the average consumer of mustard is not apt to apply that test. The German and French mustards are an interesting mixture. They are compounded of cracker dust, mustard, cayenne pepper, with vinegar, oil and sugar flavoring. Old crackers are sometimes baked brown, then ground into dust and mixed with ground cinnamon and nutmeg, and the whole is sold for nutmeg at a price that drives pure nutmeg out of the market. Ground pepper is frequently sold for less money than the unground article, which makes the naturally suspicious suspect at once that the ground goods are loaded with pepper dust, which is made from cocoanut shells or buckwheat hulls, charcoal, white meal and mustard bran. Lack of taste is as desirable in an adulteration for spices as adaptability of color. For that reason the cocoanut shell ground up very fine is desirable. Venetian red, salt and white meal can be ground together and made into a valuable addition to cayenne pepper. A dull, red pepper exported from Africa is often heavily adulterated with that mixture. It is worth only about ten cents a pound pure, but when well adulterated it can be sold to a green dealer and a green trade for Natal pepper, worth twenty-five cents to thirty cents a pound. You can buy ground ginger at almost any store for seven cents a pound when the unground is selling at ten cents. That means that the goods offered for seven cents is a mixture of white meal, starch, cayenne pepper and manilla rope, flavored with ginger. The trade, especially the country people, want to see the ginger fibres, and the ingenuity of the dealer supplies them in the form of threads of manilla rope."

American Analyst,

Published on the 1st and 15th of each month.

Subscription, - - - - - - $1 per year.
Single Copies, - - - - - - 5 cents.
Subscriptions to foreign countries, - $1.50.

Remit by Express Money Order, Draft, P. O. Order, or Registered Letter.

Advertising rates on application.

EUROPEAN AGENCIES.

On file at "American Exchange," 449 Strand, London; and American Exchange," 35 Boulevard Des Capucines, Paris.

THE ANALYST PUBLISHING CO.,
Publishers.

H. LASSING, M. D., } ***Editors.***
T. P. McELRATH, }

No. 19 Park Place, ... New York.

NEW YORK, APRIL 15, 1888.

ANSWERS TO CORRESPONDENTS.

HERCULES.—*Does the danger of lead poisoning which you ascribe to crockery also apply to glazed iron or granite ware?* Yes, unless it is properly glazed by recent processes.

CATARRH.—*What is Dabol's Solution?* The formula is varied by different physicians. It generally consists of bicarbonate of soda, boracic acid, carbolic acid and glycerine in water.

LAGER.—*Why do you persist in your articles on salicylic acid in beer?* Because the weight of scientific opinion has pronounced salicylic acid a preservative dangerous to health, and we deem it our duty to warn our readers against the use of such things.

ALLEGED AND ACTUAL FACTS.

The Doctor, a usually well informed periodical, recently published the following:

Professor Bunge, of the University of Basle, says that beer is the most mischievous of alcoholic beverages because it is the most seductive. The reason for the above is painfully apparent in this country. Demand often regulates production, and so it is with beer; no two beers brewed are of the same alcoholic strength, for while they should contain not more than two or three per cent. of alcohol, the beers are fortified to such an extent that they even surpass whiskey in amount of alcohol contained, taking into consideration the differences in amount consumed at single periods. No one seems to regard the differences in quantity; it is beer, a supposed non-intoxicating fluid, and why should they? Quantity, not quality, is the order of the day, and they forget, seemingly, the latter entirely. It is safe to say that there is not a true beer brewed in the United States, sophistication enters so largely into their composition. If this is not the case why does every brewery employ a chemist at a large salary? What necessity is there for a chemist when beer is made from hops? But if the beer is not made from hops, the necessity of a chemist is indisputable. Beer drinking has grown to an alarming extent here, and we suggest to Dr. Edson that it would be a blessing to the community at large if the different makes were analyzed and the reports made public; then people would appreciate the decoctions they drink and call beer, and it would result in one of two things, the demand would become less, or better beer would be brewed. It would be a good thing if both happened.

Coming from such a source one would naturally suppose that we are in imminent danger of being poisoned by bad beer. This would be a fair supposition but for the actual facts that beer is never fortified, that beers are not sophisticated, that breweries do not employ chemists, that beer is not and should not be made from hops. As these allegations form the only basis of the article in question and not one of them is true, the whole fall to the ground. Fortifying means adding alcohol; this is never done, would not pay to do, and is entirely unnecessary; beers are not sophisticated, as repeated analyses made by authority of the State Board of Health of New York, and other authorities, have fully demonstrated, and finally hops are the least important ingredient in beer. It is malt which is or should be used. There is no doubt that all beers, whether brewed in this country or in Europe, are too heavy in alcohol, and could be profitably and advantageously improved in this direction. Another fault with beer, which can also be readily remedied, is that it is not allowed to age sufficiently before being put on the market. The charge that breweries employ chemists is also not true; but there can be no doubt that if brewers were to employ chemists the public would get much better beer. The entire brewing interest employ jointly a chemist; but though he is a most competent man, his advice is too seldom sought, for unfortunately, the majority of brewers have got to believe, owing to their own peculiar early education, that the rule of thumb is more profitable than scientific procedure. So we find, then, as usual, that newspaper articles on such technical subjects are not to be depended upon.

ALUM BAKING POWDERS.

In a late number of the *Retail Grocers' Advocate* we find an article on the legal status of alum baking powders in New York State, which shows by unmistakable earmarks that it was evidently written for the Royal Baking Powder Company, and is, as most of their productions are, utterly unreliable. After rehashing so much of the probably made-up case decided at Canton, N. Y., as suited their purpose, it goes on to sum up as follows:

"The foregoing seems to establish the following as the law as at present interpreted by the action of the court:

"1. Alum baking powders contain unwholesome ingredients and are injurious to the health of persons consumimg them.

"2. Being such they are adulterated articles of food, and their sale prohibited by chapter 407 of the laws of 1881, under a penalty of $50 for each offense."

Even admitting that the case has been fairly stated, which it has not, nothing of the kind has been established, seemingly or otherwise. It is positively untrue that all alum baking powders contain unwholesome ingredients, and therefore the sales of well-made alum powders do not come under the adulteration act of 1881. We can produce an alum baking powder which is sold in this State, and which does not, in the opinion of capable chemists, contain as unwholesome ingredients as the Royal Baking Powder. We do not favor poorly made alum baking powders any more than we like unappetizing ammonia powders; but we cannot allow the Royal to go on in this unfair and untruthful way to misuse printers' ink and abuse the reader's confidence. We were also sorry to see the usually well-informed *American Grocer* endorse such misinformation by quoting it and patting the Royal on the back for such miserable work.

OATS AND WHISKEY.

In the last issue of the *Druggists' Circular* there appeared an article on "SCOTCH OATS ESSENCE," of which we print an abstract in another column. The alarming nature of its disclosures commanded, as might have been expected, our immediate attention. Occupied as we always are in hunting down and exposing those miscreants who trade upon human credulity and folly, and who, in the pursuit of their nefarious ends do not even stop at the sale of pure poison—how could we ignore it? A bottle of the nostrum in question was purchased at a neighboring drug store and was handed to one of our consulting chemists, who in due course sent us the report which we append:

CERTIFICATE OF ANALYSIS.

New York, April 10, 1888.

I have examined the sample of Scotch Oats Essence (Buckland's) for the determination of alcohol and opium and its compounds or derivatives, submitted to me by the AMERICAN ANALYST, with the following result:

100 parts of the sample contain—

Absolute alcohol by weight	61.96 per cent.
Opium or its alkaloids, morphine, codeine, etc	*None.*

The following comparison may be of interest:

The strongest Whiskey contains of absolute alcohol	50.00	per cent.
" Brandy contains of absolute alcohol	45.00	"
" Gin contains of absolute alcohol	40.00	"
" Rum contains of absolute alcohol	55.00	"

The method used was that set forth by DRAGENDORFF in his *Pflanzen Analyse.*

FRANCIS WYATT.

This compound is advertised as a curative remedy, or panacea, applicable alike to infants and adults for all kinds of nervous disease, and especially for dipsomaniacs, and no sane person, educated or otherwise, will deny that such a circumstance demands the immediate care of the health authorities. It is, however, deeply to be deplored that those who lend their voices to the denunciation of these horrors should not bestow more care upon their researches in the laboratory, and ascertain more fully the nature of certain chemical reactions. We have great respect for the *Druggists' Circular*, and much admire the able manner in which it has seconded our efforts to put down fraud and crime, but it nevertheless behooves us in this instance to remind it of Tallyrand's famous advice to one of his young supporters, "*Pas trop de zèle, mon ami, pas trop de zèle.*"

STUPIDITY RAMPANT.

That hebdomadal eccentricity, the *Retail Grocers' Advocate*, has flickered up again. It was popularly supposed to have been extinguished by the snubbing it experienced from the Washington Convention last winter, but not a bit of it! Here is the little joker stretching up its neck as of yore to attract attention to itself as nimbly as the little monster that jumps out of a box in the toy familiar to children. And the comparison reaches further; for, like the "Jack-in-the-box" referred to, the *Advocate* is wholly out of mind and unrecognized excepting when, with ludicrous vehemence, it forces itself into view to the mingled surprise and contempt of the victim holding it.

In a recent issue of the AMERICAN ANALYST we had occasion to comment upon a trade trick that is being practiced, in which a mercantile house occupies the sorry attitude of advertising a certain "table sauce" under a name filched from that of a standard foreign article of world-established fame. The firm in question, feeling their withers exacerbated at our exposure of their petty dodge, sought for some means of "talking back," but their position seems to have been so weak that no genuine newspaper would accommodate them, and accordingly they were forced to buy some space in the alleged editorial pages of the *Advocate*. They must have been reduced to wretched straits before they dropped to that point. The *Advocate*, naturally anxious to earn its pay, attempts with amusing seriousness to be sarcastic at our expense; but, with the same clumsy fatuity which rendered its advocacy of the "pure food" agitation last year so disastrous to that movement, it hardly opens its mouth before it lodges its foot in it knee deep. It says that the firm charged with the appropriation referred to "are to be congratulated upon receiving the adverse criticism of such a paper as the AMERICAN ANALYST is known to be. It probably doesn't

occur to counterfeit trade journals, that their opposition is more valuable than their support, but it is a recognized fact, well known to most everybody else." So say we also. The AMERICAN ANALYST never has professed to be a "trade journal," occupying, as it does, a wholly different field from that covered by the useful and well managed class of journals to which that designation properly pertains, while on the other hand—except its Philadelphia model, the *Universal Benefactor*—the *Advocate* is the only really "counterfeit trade journal" we are acquainted with in this country. That is a widely recognized fact. The blunder was unfortunate, but is to be accounted for, we presume, by the supposition that the *Advocate* writer's down-town adviser was out of reach when he penned the unlucky paragraph. We have always remarked that when that gentleman has dictated his wishes to the *Advocate* the latter expressed itself in courteous and gentlemanly language. Silly and inaccurate it has to be, by the force of its nature.

EQUILIBRIUM OF THE SEXES.

According to a writer in the *Popular Science Monthly*, notwithstanding that a general equality in the numbers of the two sexes prevails throughout the world, each region has its peculiar, apparently characteristic sexual composition. In Europe, there was anciently and still is a greater excess of women in the north than in the states of middle Europe and the East, in some of which the women are in the minority. Through Europe as a whole, the number of women is very definitely in excess of that of the men, and the excess appears to be increasing. It was very great after the Napoleonic wars; then the numbers gradually tended towards equality, and nearly reached it (1847 to 1850, 1,009 to 1,000); then they diverged again, and stood in 1870, 1,037 to 1,000. The phases of increased difference are generally observable after wars, and, latterly, appear to be the result partly of the enormous emigration which has taken place to other quarters of the earth. In America as a whole, and in Australia and Africa, on the other hand, whither this emigration with its preponderance of males is tending, the men are in excess, and the excess is increasing with the constant arrival of new parties of immigrants. Nevertheless, a near approach to equality prevails over the earth as a whole, and this whether we regard the white, black, or red races, or their mixtures.

TEA AND TEMPERANCE.

An interesting token of the growth of the temperance sentiment in Great Britain is furnished by a correspondent of the *St James Gazette*. He shows that during the past forty-seven years the average annual consumption of tea per capita of the entire population has increased from less than a pound and a quarter to nearly five pounds, and of cocoa, from about an ounce and a quarter to nearly half a pound, while the use of coffee has fallen off slightly from seventeen ounces to thirteen ounces. The total consumption of these three leading non-alcoholic drinks has thus increased nearly threefold; the exact figures are from 38.08 ounces to 99.04 ounces per capita annually. This may not indicate a fully corresponding decrease in the consumption of strong drink; but it must mean a considerable decrease, and it proves that the people are learning to appreciate the "cup that cheers but not inebriates."

COMPOUNDS OF ALCOHOL WITH WATER.—Mendeljeff has, by a study of specific gravities of mixtures of alcohol and water, arrived at the conclusion that there are three definite hydrates, containing respectively three and twelve molecules of water to one molecule of alcohol, and three of alcohol to one of water. The first of these has been obtained in the crystalline form at the temperature attained by a mixture of solid carbon dioxide and ether; the second solidifies at — 17°.

FRAUDULENT FRENCH BRANDY.

We have the authority of the *National Druggist*, based upon reports of the British consular service, for the assertion that French brandy, warranted pure and labeled with any brand, of any desirable age, bouquet, etc., is manufactured in vast quantities at La Rochelle, the materials being German potato spirit (*Kartoffel-Branntwein*) and flavoring essences from various sources. The amount of this stuff that is exported to America, England and the colonies of the latter, is said to be something enormous. It is strange that the French government, usually so punctilious on such things and severe on sophistications, does not take some action in regard to the matter, especially since attention has been drawn to it it so publicly and officially. It seems to us that the facts here stated, along with the well-known falsifications of French wines, should furnish the American Congress with an excellent basis for a bill of a retaliatory nature, which would either open France to American products now virtually excluded from that country (pork, for instance), or would shut out the vile poisons which France is sending to us in such enormous quantities.

BREATHED AIR.

SOME RECENT INTERESTING EXPERIMENTS.

From the *British Medical Jonrnal* of January 28th we learn that at the meeting of the Société de Biologie of Paris, on December 24, 1887, MM. Brown-Séquard and d'Arssonval presented a note on some recent experiments made by them to prove the toxicity of the air exhaled from the lungs. They assert, first, that the air exhaled nearly always contains ammonia; secondly, this air contains, in very minute quantities, organic matter which, if not already putrefied on leaving the broncho-pulmonary passages, has great tendency to rapid alteration, even at a low temperature; thirdly, confined air charged with pulmonary exhalations is extremely noxious, even when containing only 1 per cent. of carbonic acid, with a corresponding diminution of oxygen; whereas atmospheric air containing the same proportion of CO^2, and a corresponding diminution of oxygen, but containing no pulmonary exhalations, causes hardly any disturbance. The authors injected into the circulation of rabbits a small quantity of a liquid resulting from the condensation in refrigerated glass bulbs of air exhaled from the lungs of several human beings, and also from the lungs of a dog (taken from the trachea). The results were the following: More or less marked dilatation of the pupil; slower respiration; rapid decrease of temperature, varying from 1° to 5° C.; paralytic weakness, often extreme, of the posterior members; strange phenomenon sometimes persisted for two or three weeks. On injecting double the quantity of liquid produced by condensation of exhaled air of a dog into the carotid of a strong, healthy rabbit, there was violent tetanus, with almost complete arrest of the cardic movements and of respiration, and the animal died within a minute. It is evident that this noxious action of the exhaled air must be due to certain toxic organic substances, present in very minute quantities, not yet isolated, and the chemical composition of which is yet unknown. It is not known whether they are alkaloids, like the ptomaines; but it is evident that considering the very minute quantities in which their action becomes appreciable, this action must be very energetic.

NEWSPAPER SCIENCE.—An English daily paper recently published the following novel information regarding the lunar eclipse of January 28: "A solar eclipse only lasts a few minutes, owing to the fact that the shadow of our earth is so much smaller than the sun; but in the case of a lunar eclipse, our earth's shadow is much larger than the body of our satellite, and consequently the passage through the shadow, from side to side completely, occupies several hours."

PEPSINS.

THEIR QUALITIES AND ANALYSIS.

Although the attention of chemists has long been directed to the synthesis of the various substances composing the animal body, our acquaintance with them continues to be limited. Nor can we wonder at this ignorance when we reflect upon the liability to change exhibited by animal substances when removed from the influence of life, and remember that they are devoid of such physical properties as would enable us to separate them from other bodies with which they are associated. Thus, since in the majority of cases we can neither crystallize nor distill them, their analyses by different chemists at different periods are far from concordant, and the atomic formulæ to which such analyses have given rise are not only worthless and unintelligible, but lack the least information as to the position of the compound with relation to other substances or as to the changes which, under certain given conditions, it might be made to undergo. Albumen (C_{72} H_{112} N_{18} SO_{22}) and caseine (C_{144} H_{229} N_{36} O_{45} S) are both illustrative of this fact, and they can neither be referred to any known type, nor, even if a type were invented expressly for them, be classed with any other substances. Our most important discoveries in animal chemistry thus far are those which have revealed to us that, saving our bones, our bodies are made up of nitrogenous and non-nitrogenous elements. Aided by this knowledge we have come to understand that certain parts of our frame contain no nitrogen, and must be reconstituted by foods which are free from that element, such as starch, sugar and fat, while certain other parts require nitrogen in abundance, and find it in gluten, albumen-fibrine and caseine.

The next discoveries to these, in the order of importance, are those relating to digestion, it being evident that before food of any kind can become available it must be reduced to some form that will permit of its ready absorption by the blood. In this regard the first step is its transformation into a pulpy mass by the agency of the teeth and the saliva; the second is that which brings it under the influence of the gastric juice and the pepsin which that juice contains. By the action of this remarkable ferment nearly all the insoluble *proteine* or albuminoid compounds become dialysable, or, in other words, are resolved into *peptones*, each variety of albuminoid appearing to undergo digestion in obedience to some distinct law of its own. Thus, for example, the boiled white of egg swells up very considerably under the influence of pepsin before passing into solution; while the raw whites first undergo coagulation. Caseine, the nutritive principle of cheese, before liquefying, forms a hard coagulum, and animal flesh, devoid of fat, as well as the gluten of the cereals and the legumine of certain vegetables, are rapidly changed from a solid to a completely fluid state.

These brief considerations suffice to demonstrate the high importance of pepsin as a therapeutic agent, and at once explain the intense interest which, ever since its first successful elimination, it has unceasingly excited in the medical profession. Nor is this interest diminished because we are really in the dark as to the true chemical constitution or nature and origin of the substance. We are familiar with its effects; they have been proved to be real, both in the laboratory and in the human stomach, and we have learned how to distinguish by chemical tests and with the utmost accuracy, between the bodies upon which it acts and those which result from its action.

This, however, is as far as we can go, and pending our future greater enlightenment we must be content for the present to profit by its known qualities, and to turn them to the very best account in the alleviation of dyspeptic miseries. That the manufacture of pepsin should not be conducted upon any strictly defined or scientific basis, or in accordance with some common formula, is to

be deeply deplored, as is also the coincidence that we have no standard or universal test by which it is to be accepted or rejected as fit or improper for the purpose to which it is destined. It may be urged that no great amount of profound scientific knowledge is necessary in order to determine that the chief standard of its merit consists in its power to *peptonise*, or reduce from an unassimilable to a readily assimilable form, a greater or lesser quantity of fibrine or albuminous substances in a given period of time; but while this may be admitted, it is no less true that we live in an age of extreme competition, and that the rivalries of commerce have now led to many singular distortions of this rational idea. A single glance at the numerous trade papers and at the advertising pages of the medical journals will suffice to bear out this assertion, and to show how great is the difficulty of distinguishing between an efficient article, skillfully prepared by trustworthy manufacturers, and the nearly inert and worthless trash which it is sought to foist upon an uninitiated public. To our own minds—and we speak with the authority of experience—there should be no time lost in endeavoring to remedy this unsatisfactory state of affairs, and in attempting to generalize some uniform test by which the peptonizing action of any pepsin could be easily, readily and accurately ascertained. Knowing as we do that the gastric juice of the stomach has a constantly even temperature of about 100° Fahr.; that it is in a state of perpetual movement; and that all substances are brought into contact with it only after they have undergone a preliminary process of mastication, which has imparted to them the elements of fermentation or decomposition; our aim should be to imitate, so far as that is possible, these natural conditions. This, at all events, is what we have ourselves endeavored to do, and as a modest contribution to the literature of the subject we will now describe our *modus operandi:*

Method of Analysis or Test.

The following brands of pepsin were chosen for the experiments, and were purchased in the open market in the original packages of the manufacturers:

Fairchild Bros. & Foster's.
Dr. Carl Jensen's.

The following substances were submitted to the digestive action:

Albumen = Hard-boiled white of egg.
Fibrine = Boiled veal, fresh killed and all lean.

Preparation of the Albumen.—The fresh eggs were boiled for twenty minutes and cooled. The shells and yolks were then removed, and the white portion was immediately squeezed with great pressure through very fine muslin gauze. The quantities of the pulp necessary for the whole series of experiments were simultaneously weighed in glass scale pans, and rapidly transferred to wide-mouth glass flasks of 20 ounce capacity, with an ivory spatula. The necessary water (as detailed below), acidulated with 0.30 per cent. of hydrochloric acid and brought to a temperature of 100° Fahr., was then added, and the bottles were gently shaken with a rotary motion. At the end of five minutes there was poured into each flask one-half fluid ounce of pepsin solution. This solution was prepared by dissolving 1 dram of pepsin in 30 ounces of water acidulated with hydrochloric acid. After this addition, the flasks were gently shaken, placed on the gas oven carefully regulated to a temperature of 105° Fahr., and *agitated every ten minutes until solution had taken place.*

Preparation of the Fibrine.—A piece of fresh veal, from which all the fat was carefully removed, was placed in boiling water and allowed to simmer until the flesh had become perfectly white. After taking it from the water and allowing it to cool, it was very finely minced with a clean and bright steel knife, and the requisite quantity for each experiment was carefully weighed out in glass scale pans and placed in flasks, as already described. Two ounces of water, containing .300 per cent. of chemically pure hydrochloric acid, and heated to 100° F., were then added, and the flasks were transferred to a steam bath and kept at a uniform temperature for half an hour. At the end of that time they were removed and their contents poured off into a clean glass mortar, where the veal, having become swollen and soft under the influence of the acid, was easily reduced, with a pestle, to a paste or pulp. This pulp was then poured back into the flask from which it had been taken and the mortar was well rinsed several times with warm, acidulated water until the necessary quantity of liquid was attained (specified below). Half an ounce of the pepsin solution was then added to the contents of each flask. The latter were placed in the gas oven at a temperature of 105° F. and gently rotated every ten minutes until everything had dissolved.

RESULTS OF THE ANALYSES.

Test No. 1, with Albumen.

Mixture for Digestion.

White of egg (as described).....240 grains.
Water (acidulated as described).... 4 ounces.

Kind and Quantity of Pepsin.

Fairchild's.....1 grain.
Jensen's.....1 grain.

Time Required for Solution.

Fairchild's.....2 hours and 35 minutes.
Jensen's.....1 hour and 50 "

The solutions were clear, and there was no residue in the flasks.

Test No. 1*a*, with Fibrine.

Mixture for Digestion.

Boiled veal (as described).....240 grains.
Water (acidulated as described).... 4 ounces.

Kind and Quantity of Pepsin.

Fairchild's.....1 grain.
Jensen's.....1 grain.

Time Required for Solution.

Fairchild's.....2 hours and 15 minutes.
Jensen's.....2 " 12 "

The liquid was slightly milky, and there was a very thin film of residue on the bottom of each flask. Upon filtration through very fine muslin, and washing with lukewarm water, this residue entirely dissolved producing a slightly opaque solution, which, on being just neutralized with normal alkali, and then treated with sulphate of copper solution, changed to the beautiful and characteristic rose color of *peptone.*

Test No. 2, with Albumen.

Mixture for Digestion.

White of egg (as described).....480 grains.
Water (acidulated as described).... 8 ounces.

Kind and Quantity of Pepsin.

Fairchild's.....1 grain.
Jensen's.....1 grain.

Time Required for Solution.

Fairchild's.....3 hours and 10 minutes.
Jensen's.....3 "

The solutions were quite clear, and there was no residue.

Test No. 2*a*, with Fibrine.

Mixture for Digestion.

Boiled veal (as described).....480 grains.
Water (acidulated as described).... 8 ounces.

Kind and Quantity of Pepsin.

Fairchild's.....1 grain.
Jensen's.....1 grain.

Time Required for Solution.

Fairchild's.....3 hours and 10 minutes.
Jensen's.....2 " 45 "

The solutions were slightly cloudy, but there was no residue in the flasks.

Test No. 3, with Albumen.

Mixture for Digestion.

White of egg (as described).....720 grains.
Water (acidulated as described).... 10 ounces.

Kind and Quantity of Pepsin.

Fairchild's.....1 grain.
Jensen's.....1 grain.

Time Required for Solution.

Fairchild's.....4 hours and 45 minutes.
Jensen's.....3 " 45 "

The solutions were somewhat *opaque*, and in the "Fairchild" flask there was a slight residue. On being treated as described in Test No. 1*a*, however, the residue proved to be completely *peptonised.*

Test No. 3*a*, with Fibrine.

Mixture for Digestion.

Boiled veal (as described).....720 grains.
Water (acidulated as described).... 10 ounces.

Kind and Quantity of Pepsin.

Fairchild's.....1 grain.
Jensen's.....1 grain.

Time Required for Solution.

Fairchild's.....4 hours and 10 minutes.
Jensen's.....3 " 25 "

The "Jensen" sample was very clear; the other was *turbid*, but was without any solid residue. Brought to the boiling point, it remained uncoagulated. Treated as described in Test No. 1*a*, it proved to be thoroughly *peptonised.*

Test No. 4, with Albumen.

Mixture for Digestion.

White of egg (as described).....960 grains.
Water (acidulated as described).... 12 ounces.

Kind and Quantity of Pepsin.

Fairchild's.....1 grain.
Jensen's.....1 grain.

Time Required for Solution.

Fairchild's.....5 hours and 18 minutes.
Jensen's.....3 " 45 "

Solutions were opaque, but all the albumen was dissolved.

Test No. 4*a*, with Fibrine.

Mixture for Digestion.

Boiled veal (as described).....960 grains.
Water (acidulated as described).... 12 ounces.

Kind and Quantity of Pepsin.

Fairchild's.....1 grain.
Jensen's.....1 grain.

Time Required for Solution.

Fairchild's.....4 hours and 25 minutes.
Jensen's.....3 " 25 "

The solutions were cloudy, the "Jensen" sample less, however, than the other. They gave no coagulum when boiled, and treated *while boiling* with potassium ferro cyanide and acetic acid, *gave no precipitate.*

Test No. 5, with Albumen.

Mixture for Digestion.

White of egg (as described).....1,200 grains.
Water (acidulated as described).... 12 ounces.

Kind and Quantity of Pepsin.

Fairchild's.....1 grain.
Jensen's.....1 grain.

Time Required for Solution.

Fairchild's.....6 hours and 35 minutes.
Jensen's.....4 " 45 "

The solutions were translucent, and gave no coagulum when boiled.

TEST NO. 5*a*, WITH FIBRINE.

Mixture for Digestion.

Boiled veal (as described).....1,200 grains.
Water (acidulated as described)... 12 ounces.

Kind and Quantity of Pepsin.

Fairchild's.....1 grain.
Jensen's.....1 grain.

Time Required for Solution.

Fairchild's.....5 hours and 40 minutes.
Jensen's.....4 " 15 "

The solutions were both cloudy, but did not coagulate when boiled. In the "Jensen" sample there was no deposit, but in the other there was a small residue. After this residue had been separated by filtering, the solution was found to be free from undigested albumen by the usual tests.

In order to ascertain the nature of the residue, it was dried in the gas oven at 200° F., weighed, and to its weight was added the percentage of water known to have been contained in the boiled veal as at first used. The following was the result:

Weight, 37 grains + 60 per cent. water = 59.20 grains.

Without removing it from the filter paper, the residue was now tested for nitrogen, by Kjeldahl's process, and gave the following proportions of that element in the form of ammonia:

Nitrogen, 3.40 grains, which, + 6.25 = 21.25 grains albuminoids or, say, 59 *grains boiled veal.*

To briefly sum up the final result of this last, and probably most interesting, of the experimental operations, we may hold that 1 grain of Jensen's pepsin dissolves 1,200 grains boiled veal in 4 hours and 15 minutes, and 1 grain of Fairchild's pepsin dissolves 1,140 grains boiled veal in 5 hours and 15 minutes.

FRANCIS WYATT, PH.D.

New York City, *April* 7, 1888.

HOME SANITATION.

IMPORTANCE OF EDUCATING WOMEN IN THE SUBJECT.

One great advantage to be be derived from the teaching of physiology in our public schools is the fact that thereby will be raised up a body of women who will and do, where so instructed, make the best sanitarians. Three or four years ago Benjamin Ward Richardson, M.D., President of the British Medical Association, and one of the foremost sanitarians of the world, said: "I want strongly to enforce that it is the women on whom full sanitary light requires to fall. Health in the home is health everywhere; elsewhere it has no abiding place. I have been brought indeed by experience, to the conclusion that the whole future progress of the sanitary movement rests for permanent and executive support on the women of the country. When, as a physician, I enter a house where there is a contagious disease, I am, of course, primarily impressed by the type of the disease, and the age, strength and condition of the sick person. From the observations made on these points I form a judgment of the possible course and termination of the disease, and at one time I should have thought such observations sufficient. Now I know them to be but partially sufficient; a glance at the appointments and arrangement and management of the house is now necessary to make perfect the judgment. By this glance is detected what aid the physician may expect in keeping the sick in a condition most favorable for escape from death; and by this is also detected what are the chances that the affection will be confined to one sufferer or distributed to many. As a rule, to which there are the rarest exceptions, the character of the judgment hereupon is dependent on the character of the presiding genius of home, or the woman who rules over that small domain. The *men* of the house come and go, know little of the ins and outs of anything domestic, are guided by what they are told, and are practically of no assistance whatever. The *women* are conversant with every nook of the dwelling from basement to roof, and on their knowledge, wisdom and skill the physician rests his hopes. How important, then, how vital, that they should learn, as a part of their earliest duties, the choicest sanitary code." We welcome them to our ranks, the growing army of women who are in the near future to be our numerous and most efficient aids in preventive medicine—concerning which the renowned Dr. Austin Flint said: "The prevention of disease is a higher and more useful branch of medicine than therapeutics."

SOME EVERY DAY SUGGESTIONS.

THE UTILITY AND NECESSITY OF DISINFECTION.

No greater boon has been conferred by modern science upon humanity than the elucidation of the numberless mysteries which make up so large a portion of daily life. After centuries of ignorance and after paying the penalty of that ignorance in suffering, disease, unhappiness and often death, we are at last in a position where, although our knowledge is very far from complete, yet, we are able to discern the relations of facts heretofore inexplicable and to protect ourselves from material evils and dangers which in the past we childishly summed up under the phrase "An inscrutable Providence." We now know that a large part of the ills of life come from germs—germs so minute as to be at times invisible, which are numberless in amount, which penetrate everywhere, and which, according to their nature, are so far as the human race is concerned, inert, annoying, injurious, destructive, poisonous or even deadly in character.

In their movement and distribution they vary according to their surroundings. On the tops of lofty mountains and in the higher strata of the atmosphere they either do not exist at all or else obtain in such small numbers as to have eluded the eyes of all investigators. In low-lying countries, on the other hand, they abound in immeasurable amount. In very cold countries like the Arctic lands their number is extremely small; in warm latitudes they simply swarm. As between dry and moist atmospheres they thrive far better in the latter. In countries inhabited by human beings the lowest number observed has been in the hamlets of the Upper Alps and the Himalayan plateaus and the largest in the malarial settlements of the Guinea coast and fever-belt of South America. Their influence as far as men are concerned depends upon the species or genus to which they belong. These are so mixed that, as yet, they have never been classified. Yet, one class, it is known, brings or accompanies contagious and infectious diseases. In this regard many biologists claim to have identified the germs which produce or go with scarlet fever, diphtheria, croup, yellow fever, small-pox, whooping-cough, pulmonary consumption, fever and ague, mumps and measles. Another class induces or creates fermentation, putrefaction or mouldiness. A third makes the mould and so-called fungus on damp walls.

In studying the action of germ-life upon human relations, three stages naturally present themselves to the mind. The first is the period in which germs appear and approach; the second is when they settle and begin to act, and the third is when their action is under full way and thereafter. In regard to the first stage, the human being can do but little. The air is full of these living specks and will be so to the end of time. All that can be done in opposition is to use natural forces. Where, for example, there are chills and fever in a neighborhood, the planting of sunflowers and blue-gum trees (*encalyptus globulus*) is invaluable. So in cities the creation of parks, the general planting of trees in the streets, the establishment of gardens, grass-plots, flower-boxes and the like wherever convenient is of the highest benefit. Of equal virtue is cleanliness on the part of both individual and municipality. The daily washing of steps, yard and side-walk, the regular sprinkling of streets by water-carts, the occasional flushing of thoroughfares by the fire department, the strict prohibition of garbage and offal in public places, the never-relaxing supervision of plumbing and domestic and municipal sewage, are all duties of the most imperative kind.

Other suggestions are the throwing of coal-ashes on the walks and roads in the country. They make an excellent roadway and are destructive to all germ-life. Wood-ashes should be mixed with compost and used as a fertilizer. Garbage, swill and other similar forms of organic matter should be burned, or where the opportunity allows, deeply buried in the soil. The practice of burning underbrush, and especially of firing swamps in the late autumn, so widely pursued by farmers, is for the same reasons very highly to be commended. All fences should be kept well painted, or what is even better, whitewashed each year, or where it can be done they should be made from wood that has been treated with creosote, zinc, copper or corrosire sublimate. Brick walls on the outside of a building should be painted, oiled with kerosene, treated with paraffin or with soluble glass. Porous dolomites, limestone, sandstone, terra cottas, and above all, that architectural abomination, brownstone, should be treated with soluble glass. The smooth surfaces produced in all these not only prevent the lodgment and resulting development of germs, but also allow the housekeeper to wash them at stated intervals without detriment. For the same prevention of lodgment and entry of germs all external doors and windows should be made to fit air-tight and should be kept so always. An ideal house is ventilated from a flue or shaft whose air has been strained, washed and dried.

The same principles apply to the interior of a house. Floors, wainscotting, doors and other woodwork should be made of hard wood, and this should be oiled, varnished, or what is better, waxed or paraffinated. Rugs and mattings should be employed rather than carpets; lace curtains or the lovely Japanese straw hangings rather than silk, plush or woolen; Vienna bentwood furniture, "Puritan," Chinese, Japanese, cane-seat, rattan, rather than upholstered goods; leather-covered articles rather than woolen-covered; woven wire pillows, cushions and mattresses, rather than those made with hair, rags, straw, feathers, wool or cotton.

Despite all these precautions some germs will enter the household and begin to develop. At this point disinfection is a necessity. In fact, it may be justly said that the first rule of household life is, disinfect; the second, *disinfect;* and the third, DISINFECT. All sinks, bath tubs, stationary wash tubs, water closets and leaders should be cleaned once a week with some powerful germicide and antiseptic. Any substance of this class is admirable, even the weakest. It is better however, in the long run, to use the strongest. Where there are children in the house, avoid as far as possible poisons whose character is not patent. Crude carbolic acid is not as valuable as zinc chloride; but a child will never touch the former, while he may the latter, under the impression that it is sugar or salt. In the general order of strength and availability disinfectants stand as follows: Corrosive sublimate, sulphurous acid, zinc chloride, zinc iodide, zinc sulphate, copper sulphate, iron sulphate, phenol, creosote, crude carbolic acid, chloride of lime, germicide, "Girondin," salicylic acid, thymol, nitrous acid, hydrogen per-oxide, ammonia, coal tar, sanitas, camphor.

Carpets, rugs, mattings, hangings, upholstered goods and bedding should be disinfected by spraying them with a dilute disinfectant solution. A large-sized atomizer gives the best results.

All receptacles for food, such as flour barrels, cake boxes, bread tins, ice chests, refrigerators, should be regularly washed out with strong but odorless disinfectants, and thoroughly washed a second time with

warm water to remove any loose or remaining disinfectant. Dirty clothes, whether apparel, towels or bed linen, should never be put aside unless they are disinfected. A dirty clothes basket is *anathema maranatha*. If the ceiling and walls are papered, the paper should be well varnished, so as to allow the use of a damp cloth or a half-wet sponge. For this kind of disinfecting washing soap is of little use, unless it be carbolic, salicylic, chlorinated or other special detergent.

Cellars and garrets should be whitewashed at least twice a year, and be disinfected every three months besides. The best method with them is to use a watering pot with a fine rose and a liquid composed of one hundred parts water and one of white vitriol (zinc sulphate), or two of chloride of lime or one-tenth of a part of corrosive sublimate. In sweeping a patent sweeper is better than a broom, and sawdust dampened and disinfected better than either.

SCOTCH OATS ESSENCE.

IS IT A COMBINATION OF OATS, WHISKEY AND MORPHINE?

The energetic and ingenious manner in which the above entitled article is being advertised at present over the breadth of the land seems to have excited an inquiry into its character. The Boston *Journal of Health*, in its April issue, declares that it is a tincture of oats, with considerable whiskey added. The *Druggists' Circular* has subjected it to analysis, and discovers it to contain morphine also. The following is an abstract of the *Circular's* comments on the subject:

Under the above title a proprietary article is now being extensively advertised in most parts of the United States as a tired brain and tired nerve recuperator, which is claimed to give lasting powers to the system while free from all enslaving qualities such as morphine, opium and alcohol possess. The aged and the infant are alike advised to use it when pain is to be assuaged, sleep is needed or exhaustion to be overcome. To get full benefit, however, the compounder tells the public that "its use must be regular," and the patient must press the dose until the full effect is felt, beginning with a half or one teaspoonful. Some people, he says, require much more of a remedy to act upon them than others do. This allures each user up to the dose which gives physiological results and saves such as possess an unfavorable idiosyncracy from seriously harming themselves at the first trial.

Without doubt, Scotch oats constitute an admirable article of diet. Johnson, the English lexicographer, defined the word "oats" as an article used in Scotland to feed men and in England to feed horses. Carlyle, the Scotch reviewer, retorted: "Yes, and what fine horses you have in England and what fine men we have in Scotland." These fine horses and fine men, however, were not raised on a mere essence of that superb cereal. As a Scotchman, curiosity to know something about this new American find must, under the provocation, be considerable excusable. A principle so remarkable should not be held secret by anyone. All men should know its nature, and especially Scotchmen. The simple analysis here reported aimed more at determining the constituents qualitatively than quantitatively, the latter task being an exceedingly tedious and difficult one when organic compounds are under examination.

The specific gravity of the essence at 60° F. is 0.95808. When it is boiled down to one-third of its volume and distilled water enough to restore the original bulk added, we have an article having a specific gravity of 1.00316 at the same temperature. More than one-third the weight of the essence is therefore alcohol. This constitutes it a pretty fair quality of liquor to drink should the dose required be found a high one.

When the essence was freed from alcohol made slightly alkaline with ammonia and shaken vigorously during a couple of days at intervals of an hour or so for five or ten minutes each time, a fine precipitate settled down to the bottom of the solution. On passing the whole carefully through a pair of tared filters, washing first with water drop by drop and then with ether, there was found to be 0.068 gram of a granular whitish powder as the product of one bottle of six ounces.

The appearance of the powder was that of crude morphine. The way it was procured declared it to be morphine and no other known alkaloid.

Without a shadow of chance for error we discover then that this "Scotch oats essence" contains morphine. Analysis of a genuine essence of oats of American make, and probably growth, revealed no morphine present. If oats grown in Scotland contain this dangerous alkaloid of the poppy, none of the many able chemists of that country, from Black, the father of the science, down to his latest successor at Edinburgh University, have found it out. "Avenesca," the fanciful title somebody has given the active agent of this proprietary preparation, is then a synonym for morphine, and the article that like opium will "quiet pain and produce sleep" is after all morphine. It is this, too, that is pledged to destroy the morphine craving and "free the victim from his terrible bondage." To say that "the infant and the octogenarian may alike use it without any harm and much benefit" is to tax the credulity of those who know its composition to the utmost, while calculated to mislead the unwary in a manner that is pitiable.

Is this thing right? Who will defend the ignorant and innocent in their helplessness? The quantity in a dram is not great, it is true, but when the dose is increased, as advised, the danger appears. The amount abstracted from the bottle was probably but half what it contained. From 60 c. c. of distilled water, containing 0.125 gram of sulphate of morphine, the same process abstracted only 0.055 gram, or less than half. A bottle of "Scotch oats essence," by this showing, would contain more than 0.136 gram of alkaloid, or over two grains. As a salt of morphine weighs heavier than the base from which it is made, this figure must have an additional increase to truly represent the amount added. There cannot, therefore, be much short of a half grain in every ounce. If we say only one-third, the amount is quite sufficient upon which to lay the foundation for a dangerous habit.

The directions for use say: "As a general rule, a pain or fulness at the base of the brain, and a feeling of smarting in the eyes, are the usual indications that the dose is too large and should be reduced. Even when these symptoms show themselves, the remedy, even if continued, will do the person no actual harm; but in such cases the dose should be somewhat reduced." Thus the assurance of safety is kept up while the dose increases.

The odor given in burning supports the view that it is probably a tincture of *Avena sativa* to which the morphine is added.

INDIA RUBBER.

ITS CHARACTER, COMPOSITION AND MANUFACTURE.

(*Continued from page* 117.)

The influence of cold upon india rubber is very remarkable, and tends to deprive it of its rigidity and elasticity. This may easily be shown by taking a strip of rubber and exposing it for a short time to a temperature of 0° C., when it soon becomes stiff and loses its original pliability. The action of either heat or tensile strength has the peculiar power of restoring this pliable property. If one-half of the strip of rubber that is being experimented with be gently warmed, and the other stretched to two or three times its length, this will become readily demonstrated. In the case of the stretching, it is probable that the effect is due to the heat evolved in the action, as it is easily proved that heat is produced when rubber is extended with the aid of an air thermometer. The influence of heat upon rubber is interesting and well worthy of notice; the action of a moderate heat is striking, causing it to contract as regards its length, but to expand in a transverse direction. If, however, it is heated to 100° C., it becomes very soft and is entirely deprived of its elasticity. If the heat be increased to 120° C., it becomes still more soft; but after exposure to a moderately cold temperature it regains its characteristic properties. If the temperature reached is as high as 200° C., the caoutchouc becomes permanently viscid, with but a slight tendency to harden again. This variety of india rubber is of great value for making air-tight joints which can be readily undone. When rubber is subjected to a temperature above 200° C., it becomes decomposed into a number of volatile hydrocarbons, a small portion of carbonaceous matter being left behind in the vessel in which the operation is conducted.

There are two species of deterioration that india rubber is prone to undergo. In one case it has a tendency to become soft and lose its elastic character, and in the other to become yellowish, brittle and resinous. In the latter case the decay is no doubt due to oxidizing influence, the oxidation proceeding more energetically when the particles are in a fine state of subdivision and under the influence of moisture. Ozone oxidizes rubber extremely rapidly, and it is highly probable that the speedy deterioration that goes on at some time is attributable to ozonic action. This is probably a similar action to that which oil of turpentine has in destroying india rubber, and should not be lost sight of by the aerated water manufacturers, if inferior essential oils and essences are used in compounding flavored beverages. The action of sunlight often causes decay, either by converting it into a soft and sticky substance, or in to a hard mass. It is desirable generally to store india rubber in a place where it will not be subjected to the action of prolonged light. In the industrial working of india rubber, the first matter to be attended to is the removal of the various impurities that are present in negrohead rubber, hay or a similar substance being placed inside so as to make the specific gravity about the same as the genuine article. Alum and sulphuric acid are often employed so as to effect coagulation of the juice, and traces of the latter sometimes appear in the rubber to cause mischief.

All these impurities are efficiently removed in practice by the following process, viz.: The lumps of crude rubber are first softened by the prolonged action of hot water, and then cut into slices by means of a sharp knife, generally by hand, as then any large stones or other foreign substances can be removed. The softened slices are repeatedly passed between grooved rollers, known as the washing rollers, a supply of hot or cold water being caused to flow over them. Solid impurities soon become crushed, and are carried away by the water, while the rubber takes the form of an irregular sheet, perforated by many holes. The washed product contains in its pores a notable quantity of water, which is removed by hanging the rubber for some days in a warm room. It is now ready for incorporation with sulphur or other bodies, or for making into solid masses by the masticating machine, an apparatus which consists of a strong cylindrical cast iron easing, inside which there revolves a metal cylinder with a fluted or corrugated surface. Some of the rubber being placed in the annular space between the inner cylinder and the outer casing, the former is made to revolve, and the continued kneading action to which the rubber is subjected works it into a mass. Before commencing the mastication it is generally necessary to warm the apparatus by means of steam; but as the operation proceeds the heat is generally required to be moderated by streams of cold water running through channels provided for the purpose.

To convert the masticated rubber into rectangular blocks, it is first softened by heat, and then forced into iron boxes or molds. The blocks are cut into thin sheets by means of a sharp knife, which is caused to move to and fro about 2,000 times per minute, the knife being kept moistened by water, and the block fed up to it by mechanical means. Cut sheets are largely used in the manufacture of certain classes of goods, these being made by cementing the sheets together with a solution of rubber in naphtha or berrol. Most articles, however, made of cut sheet rubber would be of little utility if they were not hardened, or vulcanized, by the action of sulphur, or some compound of it. After vulcanization, rubber is no longer softened by a moderate heat, nor is it made rigid by cold, and the ordinary solvents fail to dissolve it. It must be borne in mind that it is not the mere admixture of sulphur and rubber that will cause the vulcanization, but their combination.

If an article made from sheet rubber is immersed for a short time in a bath of molten sulphur, maintained at a heat of 120° C., the rubber will absorb about one-tenth of its weight; and, although somewhat yellowish, owing to the presence of free sulphur, it remains unvulcanized and unaltered as regards its general properties. If now, however, it is maintained for about an hour at a temperature of 140°, real combination ensues, and the rubber becomes vulcanized.

DOMESTIC DIETETICS.

SEASONABLE FOOD.

April.

Meats. — Beef, lamb, mutton, veal, ham, kidneys, liver, sausage.

Game and Poultry.—Brant, pigeon, snipe, chicken, duck, goose, turkey.

Fish. — Bass, carp, catfish, cod, eel, flounder, halibut, herring, lamprey, lobster, mackerel, oysters, perch, prawn, rock bass, rock fish, salmon, shad, shrimp, smelt, sturgeon, trout.

Vegetables. — Artichokes, carrots, celery, lettuce, onions, parsley, parsnips, potatoes, turnips, water-cress, radishes.

PRACTICAL RECIPES.

Pea Soup.—After picking over one pint of split peas, wash them and put to soak over night; in the morning turn off the water and put them in the soup-pot; add four quarts of cold water, a half pound of clean salt pork, a small piece of celery, onion and a little pepper; boil gently four or five hours, being careful that it does not burn; when cooked it will look smooth and rather thick.

Stock for Soups.—The foundation of soups is usually stock obtained by boiling a joint of fresh beef, veal or mutton, or a chicken may be used. The "shank" of beef is best. To every pound of meat and bone, take one quart of water, and and a small teaspoonful of salt; boil slowly but steadily, allowing one hour for each pound of meat; watch closely until all the scum has been carefully removed. This stock can be used immediately or kept a week, in cool weather, and different soups made each day by adding different vegetables. Potatoes pared and sliced very thin can be added to almost all kinds of soups; the same is true of "noodles" made by rubbing beaten egg with flour until very fine For cabbage soup, add to the above finely cut or shred cabbage for slaw. Bean soup made from smoked beef is excellent in the Spring.

Sugar Cookies.—Two cupfuls sugar, one cupful butter, two eggs, six tablespoonfuls sweet milk, one teaspoonful Horsford's baking powder, mix with sufficient flour to make thin dough.

Graham Griddle Cakes.—Mix together dry, two cupfuls Graham flour, one cupful wheat flour, two heaping teaspoonfuls Horsford's baking powder, and one teaspoonful salt; then add three eggs well beaten, one tablespoonful lard and three cupfuls sweet milk. Cook immediately.

Fried Tripe.—Cut one and a half pounds of cooked tripe into strips about an inch and a half long; season, put into a hot pan and fry quickly in butter; put into another frying pan three sliced white onions, with oil and butter; fry them until nicely colored, then put together with the tripe, and finish with half of a small clove of garlic, chopped with parsley; add half a teaspoonful of vinegar and serve very hot.

Lemon Pudding, Boiled.—Chop half a pound of suet very fine, mix with the same weight of bread crumbs, the juice of two lemons, six ounces of pulverized sugar, three eggs, and the zest of the two lemons taken before the juice is extracted; mould or cloth, boil for two hours; to procure the zest of the lemon, rub the lemon with a lump of sugar, and when the sugar is coated with the yellow zest, scrape it off with a knife, and proceed rubbing again; go on thus, alternately rubbing and scraping until all the zest is taken from the surface of the lemon. Serve with a thick custard or clear arrowroot sauce flavored rather strongly with essence of lemon.

Cabinet Pudding. — Seven or eight small sponge cakes, three ounces of stoned raisins, four eggs, one pint of milk, grated rind and juice of half a lemon, and sugar to taste; stone three ounces of raisins and arrange them over the inside of a buttered basin or mould; then nearly fill it with the cakes, add the eggs, well beaten, to the milk, add the flavoring, then sweeten to taste, and pour it over the other ingredients; then tie a cloth over it and boil for one hour. Serve with sweet, brown sauce.

Brown Sauce.—One-half pint of milk, one tablespoonful of butter, two tablespoonfuls of sugar, two tablespoonfuls of flour, and two tablespoonfuls of molasses; boil ten minutes.

Whole Wheatmeal Pudding.—One pound of the meal, two ounces of good butter, three ounces of soaked tapioca, mix all together with cold water rather thinly, sew loosely in a cloth, put it in boiling water, and keep it on the boil for two hours at least; sliced and fried the next day with a dish of fresh boiled peas and mint sauce; it is very nice.

GASOLINE.

ITS DANGERS AND HOW TO AVOID THEM.

The Michigan State Board of Health, in a circular just published, gives the following succinct rules for the use and care of gasoline. Every person employing or keeping gasoline should keep constantly in mind the following facts and cautions respecting its use: (1) Gasoline is an extremely dangerous, explosive substance. (2) It should be kept in a cool, well ventilated place, if possible out of doors, or in an outbuilding; never in a kitchen, closet or cellar. (3) A vessel containing gasoline, unless tightly closed, should never be brought within ten feet of a lamp, stove, grate, flame, or fire of any sort. The small flame of a match or even a spark is sufficient to explode the gas when present in sufficient quantity. (4) The vapor of gasoline may be carried by a draught or current of air, and thus be brought in contact with fire at considerable distance, even greater than that mentioned in the preceding paragraph; consequently gasoline should never be opened or poured from one vessel to another in a current of air, unless the current is from the room out of doors. (5) The danger in connection with the use of gasoline stoves is not so much in the stoves themselves as in having the gasoline about; yet, by continued use, the valves of a stove may become worn so that leaks may occur, and thus a stove may become a source of great danger. (6) If an overflow of gasoline occurs from being turned on too freely, from leakage of valves, or from the blowing out of the generating burner, as sometimes accidentally occurs, the surplus gasoline should be carefully wiped up, and the room should be well aired by the opening up of windows and doors before the burner is lighted. (6) If an open vessel containing gasoline has been standing in a room over night, or an overflow has occured during the night, or if there is found in a room a strong smell of gasoline at any time, the room should be opened and well aired, before a match is lighted or a lighted lamp or candle is carried into the room. (8) Gasoline should never be used for lighting a fire. An explosion, which may possibly be fatal in its effects, is almost certain to follow. Persons have been maimed for life in this way. (9) The use of gasoline lamps is, if possible, attended with even greater dangers than the use of gasoline stoves. (10) A wise regard for safety will lead to disuse of gasoline in any form for domestic purposes. (11) Gas or kerosene stoves may be substituted for gasoline stoves, but neither gas, gasoline, nor kerosene stoves are so safe or healthful as the ordinary wood or coal stove. The ordinary stove aids in the ventilation of the room, and carries away the poisonous gases formed by the combustion of the fuel, whereas the other forms of stoves discharge the products of combustion into the air of the room, compelling the occupants to breathe the poisonous gases. Neither gas, gasoline, nor kerosene stoves should ever be employed in other than very open or well ventilated rooms, unless provided with a special flue or ventilating duct for the purpose of carrying off the products of combustion.

EUROPEAN DISHES.

SOME FOOD NOTIONS OF OUR TRANSATLANTIC COUSINS.

This is the idea of how a *menu* should be prepared, offered by the *chef* of the King of Greece: Every repast ought to begin with two soups, one thin and the other thick; the *hors d'œuvres* give a slight repose after soups, and then the attack is begun by two releves, fish or meat and vegetables. After this substantial beginning it is well to go *moderato* with the entrees, which may be poultry or light meat. This brings us to a forced repose in mastication, and the stomach needs to be teased in order to set itself to work again. This is the moment when the Normands take a drop of brandy, and when other people eat a sorbet. After that the roasts can be assailed; they should always consist of game and be accompanied by a salad, for, hunger having been appeased, the vinegar and seasoning of the salad is necessary to facilitate digestion. Afterwards vegetables are served, but simply for the form, and then dessert and coffee.

When American, English and French dishes pall upon the taste there seems to be no reason why the East and the South should not tempt one, if only for the change. In fact, Turkish cookery is delicately epicurean; it ranges like the French, through soup, fish entrees, vegetables, roasts and sweets. The *pilaff* is a national dish, and has the charm of variety, for it is served in many forms. The elaborate *pilaff*, as the dish of distinction, is prepared by first boiling and then cutting small and frying brown a chicken and a shoulder of mutton; the same broth is used for both, the chicken being cooked first; a pound of rice is next washed, dried in a cloth, boiled five minutes in the same broth, then drained and browned with butter in a deep saucepan; a handful of raisins and enough water to cover well the rice are next added, with a tablespoonful of saffron or curry, and an onion sliced and fried brown in butter; when the rice is tender the chicken and mutton are warmed with it, and it is served with a garnish of hard-boiled eggs cut in rings. A delicate ragout consists of hash made of a fowl boiled to pieces, stewed

with rice, sweet herbs and onions, stewed lambs' bones, and force-meat made of gourd's marrow cooked in butter. The *pilaff* is generally quite as warm as curry

Chief among the rice dishes of Italy is the risotto of Milan and the cream of rice and chicken. To prepare the risotto, parboil well-washed rice in boiling water for five minutes, draining and drying it on a cloth; fry it brown with a little chopped onion and butter, and then stew it until tender in enough highly seasoned broth to cover it well; it is necessary to watch it closely, and shake the saucepan, as the rice absorbs the broth, to prevent burning. When the rice is done put it in a buttered mould with shreds of cold chicken, tongue or ham, well shaken down, dusted with grated cheese and browned in the oven. Slices of mushroom or a little curried tomato sauce may be used as variations from the chicken or tongue. Another variety of risotto prepared in the north of Italy is exceedingly appetizing when these instructions are carefully followed: Some fine sausages are twisted without injuring the skin in inch pieces and then fried brown. The rice is washed, boiled for five minutes in boiling water, drained and dried, and then browned in the sausage gravy with a chopped onion; these ingredients are stewed in highly seasoned broth until the rice is tender and has absorbed all the broth, enough being used to cover it well when it is placed to stew.

The rice preparations of Spain demand, to satisfy the native palate, a quantity of garlic. The rice is washed, boiled, and browned in butter; garlic forms the substitute for the onion; then add two large ripe tomatoes, a spoonful of grated cheese, and Spanish red pepper is added most bountifully; the rice simmers till tender in a little broth. Frequently it is served with slices of ham, bacon, sausage, smoked salmon, or dried fish, any one of these being stewed with the rice. Before the advent of the walnuts and the wine, partake of a Portuguese dish of sweet rice. A cupful of rice is well washed and boiled soft, with a pint and a half of milk, four tablespoonfuls of sugar and a bay leaf. When the rice is soft the bay leaf is removed, a gill of cream and the yolks of four eggs are added, beaten to a light foam, and the rice is then placed in a dish and allowed to cool. When perfectly cold the surface is dusted with powdered sugar and cinnamon; burnt almond dust is preferable, prepared by browning peeled or blanched almonds in the oven and then reducing them to a fine powder.

The Persians flatter their guests with a delicate little kabob, one of their chief dainties. This is a little lean lamb chop, a trifle of fat, a lump of kidney, one of liver powdered all over with finely-chopped garlic, discreetly salted and peppered, served temptingly frothing upon a silver skewer.

FRENCH COOKS IN NEW YORK.

THE ROLE THE CHEF PLAYS IN OUR HOTEL ECONOMY.

The New York public has been exercised lately by a cable despatch which announced that Mr. W. K. Vanderbilt has employed a French *chef*, Joseph Dugniol by name, late of the Café Bignon in Paris, as his "director of gastronomics," on a salary of $10,000 per year. It would be a mistake, however, to imagine that this fortunate *maitre d'hotel* is the first cook who has been so liberally rewarded. Tales equally incredible are told of the gentlemen who direct the gastronomic departments in the homes of the Rothschilds and others. Indeed, the cook is a most important functionary in our domestic economy, and in the past has enjoyed even greater distinctions and emoluments than he does now, though many of the *chefs* in Parisian restaurants who wear the white apron and cap in the evening appear in the daytime as part proprietors of the establishments they have helped to make famous. Indeed, we must go to Paris if we wish to learn about cooks and cookery. In their craze for commemorative statues the French recently unveiled at Neuilly, near Paris, a bronze statute to a cook of the early part of the century, because he rescued the potato from being a commonplace article of food, and by his ingenuity invented a hundred new ways in which to cook it. Variety and quality, but not quantity, are the points which Mr. Dugniol emphasies. This was what Horace, who was a most fastidious old eater, constantly urged in his writings. The old Romans seem to have been epicures like him, and had their *chefs;* but they were slaves and were bought in the days of Rome's greatest prodigality for the price of a king's ransom. With the Athenians the cook was a free man who stood daily in the market place, ready to be hired for particular occasions. They paid in those days as much as $350 for a six-pound mullet in Rome. When we remember that they cooked most of their food in lard and oil, we cannot be too thankful that the modern Frenchman discovered butter and gravy as substitutes. Nevertheless, gastronomy was an art then, as it is now, and when, in Rome, a cook had done some particularly delectitious dish he was called in after the feast and loaded with presents and compliments by the company. It is said that Anthony once gave a city to his cook after serving a fine supper. The luxury of a good cook had become so much a necessity in those days that Apicious, who had squandered a fortune upon his stomach, poisoned himself for fear of dying of hunger when he found that he had only $50,000 in the world.

The cookery of modern times dates from the time of Charles I., of France, who found in the Italian cook a person who took a serious interest in such matters. From then until now France has been the home of gastronomy. Under several of the French kings the cook assumed great importance. His inventive faculties were constantly called into play and his failures were severely rebuked. Under Louis XV. it was no uncommon thing to pay cooks $500 in wages, and to cajole them into good humor. Then also the most alluring incentives were giving him to secure variety in his *menus*. One historian tells of a dandy of the end of the last century who berated his cook for his want of variety. The cook, at his wits' ends to know what new thing to suggest, mentioned some turtle which he had heard of in London. Messengers were at once despatched by post in search of the dainty. When the dish was served it had cost over $500.

The advent of Dugniol has aroused the public interest in professional cooks, and draws attention to the fact that there were several very eminent *chefs* in New York before his arrival, some of whom are said to be receiving salaries quite as large as the fortunate Dugniol, and in some cases even larger. Among the best known are Charles Ranhofer, the *chef* at Eelmonico's; Jean Roth, at the St. James; John Baptiste Mitchell, at the Brunswick; Gustave Feraud, at the Fifth Avenue, and M. La Perugui, at the Hoffman house. This, of course, by no means completes the list of really first-class cooks in the city. Probably all of them are importations from France, though they are not all Frenchmen. Switzerland and Germany contribute not a few to the ranks of the best cooks.

Jean Roth, of the St. James, is said to be the highest paid *chef* at any of the hotels, with a salary of $12,000 per annum. La Perugui, of the Hoffman, is next in the list, while all the rest get salaries that would make a cabinet officer or a United States judge envious.

Chef's kingdom is, of course, the kitchen. There he is supreme. He is an autocrat, and may be a despot in some cases. A visit to his underground realm shows him in his glory. When he is above ground, arrayed in the ordinary garb of a well-dressed gentleman, he is simply a rather handsome unit of the ordinary crowd. But in his own domain he is seen to be the king bee in a very busy hive.

The duties of a *chef* are multifarious and, like the housewife's, his work is never finished. He is responsible for the cleanliness in the kitchen, the condition of the ice chests, the cutting of the meats before cooking, as well as the carving afterwards; for the cooking of every dish ordered, for every pot, pan, gridiron and plate; for the range, the broiler, the soup kettles and the coffee heaters.

A visit to a great hotel kitchen about the dinner hour is both interesting and instructive, and as all the kitchens are similar, the description of one will do for all. A call at Jean Roth's domains, for instance, discloses a large, low-ceiling room in the basement, as scrupulously neat and clean as the most fastidious housekeeper could wish. The floor is covered with a light sprinkle of fresh sawdust. At one side of the room stands an enormous range, between twenty-five and thirty feet in length, at one end of which is a large broiler. In front of the range, and about five feet from it, extends a long, wide, heavy table, unpainted but spotless. In the centre of the table is a shallow, metal-lined basin, in which stand twelve tin cans, each containing a different kind of soup. The basin is filled with boiling water, and in this way the soup is kept ready to serve at any moment. Above the table hangs a long line of shining tin and copper stewpans, basins and cooking utensils ready for instant use. On the right of the kitchen are the ice-boxes and refrigerators. One is devoted entirely to fish, lobsters and kindred articles, another to meats, cut and ready for the fire, and another for poultry and game awaiting their turn for the oven. It requires one man to attend to the fish refrigerators and another to the meat and poultry boxes. On the other sides of the room are the coffee, milk and water boilers, plate warmers and cupboards. The *chef*, when on duty, wears a white linen jacket and apron and a white lawn cook's cap, similar in shape to a ladies' mob cap. Before the range stand five other men, each clothed like the *chefs*, though some wear the white cap more rakishly, either on the back of the head or over one ear. These are the *chef's* assistants. One attends to the boiling of all meats, another to the roasting, a third to everything that is to be fried, and another to the vegetables. There are, besides, several other men and tidy-looking women, who are known as scullions and whose duties are to scrub, wash and clean. The *chef* stands near the centre of the great kitchen, which, by the way, is insufferably hot, owing to the glowing fire in the range and boilers. His eye is on everything. He can see every dish on the long range as it simmers and boils. He knows at a glance what is on the broiler and how the roast meats are answering the demand of the hungry guests up-stairs.

It is the dinner hour that the *chef* and his subordinates are fussiest, for then the black-coated waiters from the dining room hurry in, singly and in groups, each with orders to be filled at once, orders that comprise everything on the *menu* card and no two of them the same. They report direct to the *chef*, who glances over the written order, hangs it up on a bulletin board that stands on the table, and then, notwithstanding the apparent confusion about him, calmly issues his directions, first to the man at the fish or meat box, who selects from his store the articles called for, and takes it to the assistant cook at the range, who proceeds to treat it according to the particular mode of cooking he is engaged in. At the vegetable end of the range the presiding assistant is kept busy with the preparation of the edibles that come under his special province, and frequently has before him fifteen or twenty pans and kettles, each requiring constant attention. When the orders are numerous the several assistants handle the various pans and dishes under their care with wonderful skill and dexterity, and the raw material is quickly metamorphosed over the red-hot fire into appetizing dainties. During all the hurry and bustle, with a score of waiters running in and out with their unnumbered and various wants and orders, with dishes flying back and forth between the table and range, amid the clatter of crockery and tins, the din of voices, the clouds of savory steam, the sputtering of fat and stifling heat, the *chef* stands calm and unconcerned. He issues his orders quietly and with no show of excitement, sometimes even joking with some favored waiter or assistant, or

chiding another for some blunder or awkward act. All his directions are given in French, and even his conversation is carried on in that language, though he can speak English perfectly. French is the natural language of the cook's world.

The *chef's* duties are not ended after the dinner is served, and the orders from the dining room cease to occupy his attention, for then he makes a personal inspection of his ice boxes, which by the way, are cleaned three or four times a day even in winter, and he also takes an inventory of the stock. From the ice-boxes he turns his attention to other parts of his kitchen, and, after giving his instructions, retires to his little private room, or office, where he has a desk, an easy chair and several shelves with a little library of cook books. About the walls a few bright colored chromos are tacked, that serve to lighten up the place. Here he makes up his bill of fare for the following day, and in doing so he considers the amount of meat, provisions and stock remaining from the onslaught of the day, for he is bound by rules of economy in the choice of viands and the construction of his *menus*. It is both his duty and his interest to prevent waste and to utilize such stock as remains on hand.

MAN'S FOOD.

WHAT CONSTITUTES PROPER DIET.

The question as to what constitutes the proper diet for mankind is one that has been hotly disputed. A small class of physiologists claim that health and strength are to be found in an exclusive meat diet, and that starch and gastric disturbance are synonymous terms. The much larger class of vegetarians abhor all food "which has ever lived," forgetting that the wonderful vital principle is just as surely present in a grain of mustard seed as in a sheep or ox. Both classes, like most hygienic reformers, fail to take into account the different conditions which prevail in different localities and with different persons. An Esquimaux would soon freeze to death on the diet of rice which satisfies the Chinese cooly; while, if the latter childlike individual attempted to sustain life by the blubber and walrus meat of his northern brother, the Celestial mortality tables would probably form very agreeable reading for the average American statesman.

The widely different diets upon which different races of men live and thrive show that the human constitution is exceedingly tolerant in this as in many other respects; but, as far as the structure of the body can give us any indication, it would seem as if the mixed animal and vegetable diet which is in general use is that best adapted to its welfare. The food provided by nature for the nourishment of the new-born infant is certainly an animal product. The sharp incisors and canine teeth appear first, while the heavy, blunt molars, so well adapted for grinding up the soft and bulky fruits and vegetables, appear later; the last "wisdom teeth," in fact, not being cut till adult age is nearly attained. A comparison of the human teeth with those of the carnivorous dog or cat and the herbivorous horse or ox will show very forcibly how the middle ground which mankind occupy is indicated by their dental formula, and the same relations have been noted in the digestive and assimilative organs.

Admitting, then, that a mixed diet is the best adapted to the human system, the question arises, How shall the proper proportion between the two classes of food be determined? Within reasonable limits we think this can best be left to the feelings of the individual. A hard-working laborer requires and relishes a more nitrogenous and stimulating diet than the clerk or shop girl, whose labor is chiefly mental, and whose occupation requires them to remain indoors the greater part of the time. But the proper variety of food is also a personal peculiarity. "What is one man's meat is another man's poison;" and if one relishes and digests his food, and refrains from substituting stimulants in its place, he may be tolerably certain that his feelings will prove a safe guide, and he need not concern himself about the proper proportion of starches, sugars or albuminoids in his daily diet.—*Pop. Science News*, April.

REVIEWS OF NEW BOOKS.

THE CUSTOMARY TREATMENT OF THE HAIR: Considered in Relation to the Remarkable Prevalence of Premature Baldness in the United States. St. Louis: Arthur R. Deacon. 1888.

An interesting monograph on the subject of premature baldness and the causes of its prevalence in this country has been received from the publisher named above. The theme is one of wide-reaching significance in this community, where the "high forehead" and bald pate are rapidly becoming the emblems of young manhood instead of betokening, as they properly should do, the decreasing vitality incident on advancing age. The author of the little treatise before us is an English scientist, who recently made a prolonged visit to the United States, during which one of his earliest recorded impressions was that excited by the great percentage of comparatively youthful heads presenting unequivocal evidence of approaching baldness. He became convinced that the disease was a national one, and attributable to specific causes. His researches demonstrated that, while in this country there is to be found a greater percentage of prematurely bald heads than in any other nation on the globe, that hirsute defectiveness is not equally distributed amongst the population, but increases in direct ratio with the solicitude the individual bestows upon his personal appearance, the largest proportion being found among fashionable professional and business men, and the ratio visibly diminishing as the social scale is descended. We have not the space at present to do more than state the author's deductions from the observations thus briefly summarized. In a word, he attributes the prevalence of the phenomenon to the mishandling the heads of the American people experience at the hands of the barber, who applies to his customers' scalps chemical tonics, stimulants and detergents, antagonistic to the natural nourishment upon which the hair depends for its vitality. The most dangerous applications, because the most frequently used, are the alkaline shampooing mixtures of potash, soda and ammonia, which neutralize and extract the natural oil, rendering the scalp dry, and eventually killing the hair. Too frequent washing with soap, close cropping of the hair in summer, and the harsh use of the brush and comb are also dwelt upon as contributory causes of baldness. The purport of the publication is to recommend a more general use of oil in caring for the hair. The argument is well set forth by the writer, with ample illustrations from his personal observation, and is presented to the public in a neat and attractive shape, which will probably insure its careful perusal by every person whose hands it reaches.

BUSINESS NOTES.

RIGHT HERE IN NEW YORK.

WHAT YOUR FRIENDS AND NEIGHBORS SAY ON A MATTER OF VITAL IMPORTANCE.

Below will be found a sample of the multitude of letters of encouragement Messrs. H. H. Warner & Co., of Rochester, N. Y., daily receive. The subjoined unsolicited testimonials are from your friends and neighbors, ladies and gentlemen you know and esteem for their honor and straightforwardness, and who would scorn to be a party to any deception. What has been done for others can be done for you, and it is folly, nay suicidal, to longer suffer when the means of recovery lie at your very door.

NEW YORK CITY (253 Fifth Ave.)—It gives me pleasure to express my faith in the virtue of "Warner's Safe Cure," which is the only medicine I ever take or recommend. Six years ago I received the most pronounced benefit from its use at a time when suffering from mental overwork, and I have subsequently in my travels as a public lecturer recommended it to many people and personally know of several cases where "Warner's Safe Cure" has succeeded when the doctors failed. Although a perfectly well woman, I take several bottles every spring just as I take additional care in the selection of tonic-giving food at this season, believing in the ounce of "prevention" rather than the necessity for the pound of cure, and in every instance "Warner's Safe Cure" has the effect to give new energy and vitality to all my powers.

Annie Jennes Miller

Editor and Proprietor of "Dress" Magazine.

BROOKLYN, N. Y. (263 Sumner Ave.), *Dec.* 17, 1887.—I can truly say that your medicine has done our family a great deal of good.

F. Irving Bond

BROOKLYN, N. Y. (30 Irving Place), *Dec.* 3, 1887.—Our folks praise "Warner's Safe Cure" very highly, in fact could not do without it.

J. W. Dean

BROOKLYN (248 Raymond St.), *May* 5, 1885.—About ten years since, I was taken very sick, and the doctors said I had Bright's Disease and could not last very long. I suffered severely and for quite a long time. I then appeared to improve some and got around, but soon relapsed into the same condition as before, and so it went on for a long time, always suffering, never well—miserable and despondent. At last a friend, member of the same lodge, F. & A. M., persuaded me to try "Warner's Safe Cure," which I did, and very soon experienced relief. I continued steadily with it for some months, much to the disgust of my physician, an old school allopath, and now having discontinued the use for more than a year, feel better than for years past. In fact, I have no symptoms of anything being wrong with my kidneys, no pain, the water flowing freely without pain, of a good, clear color, free from sediment and normal in quantity. Furthermore, I am now free from those distressing pains in the loins, which at one time were ever present, no matter what position I might be in, sitting or standing, in bed or the easy chair. In fact I feel to-day that "Warner's Safe Cure" has cured me of a very serious complaint, not only for the time being, but permanently. It is now more than a year since I took the last bottle of "Warner's Safe Cure," and since that time I have not attempted any kind of diet, but have eaten and drank tea, coffee or anything else I might desire, and to-day am feeling better, weigh more, have a better appetite, am altogether a different man to what I was ten years ago.

Thos R. Mills

A GREAT GROCERY HOUSE.

ACKER, MERRALL & CONDIT.

A great grocery house that was established nearly, if not quite, half a century ago, at the corner of Chambers Street and College Place, still transacts business in the same locality; but the demands made upon the firm by a select family demand caused the house long ago to enlarge its facilities, and it built mammoth branch establishments in various quarters of the Metropolis that are noted far and wide for the superior quality of their goods, and they have laid under contribution the four quarters of the globe for food products equal to the requirements of wealthy and fashionable people, or, in fact, any person who wanted the best article of its kind in the grocery line at a fair price. The successors to the business of the original grocery house established themselves in trade about 1856, and soon impressed every person in down-town business circles with their push, energy, capabilities and unquestioned integrity. Mr. Acker, however, had been the leading spirit in the house of Messrs. Hope & Co. Mr. Condit came into the house in 1862, and has been very instrumental in the successful prosecution of its business. The history of this sterling house is co-extensive with the growth and grandeur of the Metropolis. From a comparatively small beginning, by honorable dealing, articles of surpassing excellence, and great shrewdness, it has attained to such a degree of success that the house to-day maintains a front rank in the record of prosperous concerns, dealing in standard and fancy groceries, wines, liquors, cigars, and the choicest products of the plantation, farm, field, orchard and vineyard, as well as all the miscellaneous supplies of mill and factory that enter into the annual needs of a prosperous household. Years of experience and profound acquaintance with their business has rendered the individual members of the firm connoisseurs and experts in every substantial and luxury included in their comprehensive and varied stock. None but absolutely pure goods are handled, and their teas, coffees, spices, sauces and canned goods are entirely unexceptionable, and their domestic and imported stock has always been the very best obtainable.

Every modern convenience is found in the spacious stores of this firm, and the needs of their immense army of consumers has within the past few months compelled the firm to add still more room to their former great space down-town, and the result has been a new and elegant building in College Place, in the rear of the old store, which they are now about to occupy, which will enable them to carry on their wholesale as well as retail trade to better advantage than ever before, including prompt shipment and delivery to all parts of the country. The new and enlarged store occupies the whole of the College Place front, from Chambers to Warren Streets, being the depth of the entire block, and covering 175 feet, and on Chambers and Warren Streets, respectively, of 50 feet. The cigar business alone is only one feature of their trade; but the distribution is actually immense, as there is scarcely a first-class cigar store in a leading thoroughfare in New York, that does not sell large quantities of the Acker, Merrall & Condit cigars; and this same demand has grown everywhere, and they supply wholesale and retail dealers in all the large cities of many lands, and export their genuine Havana brand to the principal cities of Great Britain and Continental Europe. The same extraordinary facilities and demand prevail in the wine and liquor department, and their branch in Paris, at No. 39 Rue de Chateaudun, enables them to obtain the pick of the choicest vintages of old, rare and full-flavored wines, as well as the best distilled liquors, the finest beers, ales, cordials, foreign fruits and delicacies of every description.

Families, clubs, hotels, restuarants, public institutions and the shipping on both the ocean and inland waters obtain their choicest goods in the grocery line from the immense stock always found at their stores in such abundance as to excite the admiration and wonder of every beholder. It requires rare executive talent and great familiarity with details to manage an immense traffic of this description; but Messrs. David D. Acker, William J. Merrall, John W. Condit and Charles L. Acker have always showed themselves to be equal to the occasion. Mr. Acker has recently deceased. The future career of the house bids fair to be as remarkable as their past success, which in the course of a little over thirty years has seen a trade of less than $100,000 develop into a business of a score or more of millions, and all the while constantly expanding.

POSITIVE PROOF.

It may be well to give our readers a little of the inside history of one of the best advertised tonics of the day. We refer to Mrs. Harriet Hubbard Ayer's Vitæ Nuova. It is nothing more or less than a remedy prepared from the prescription of one of the most eminent physicians in New York City—just exactly what he would give you if you needed a tonic. This prescription was given to Mrs. Harriet Hubbard Ayer when she was very ill, as it has been given by the same physician to many other overworked people on the verge of nervous prostration. Mrs. Ayer now offers it to you unchanged in any way, excepting that when Mrs. Ayer commenced to manufacture it for sale she discovered that one of the ingredients, which is very expensive, is invariably adulterated. She went to first hands at once and made arrangements for a supply of this ingredient, which should be absolutely pure, as she is determined to maintain the quality in every ounce made. It tastes like a wine thirty years old, while positively free from alcohol or narcotics, and purely vegetable, and without the reactionary effects which render many tonics worthless.

The Recamier Preparations, from which Mrs. Ayer is said to have made a fortune, have gained the top notch in the ladder composed of preparations which go to beautify the American woman, and no woman need fear to use them after reading the following certificate:

From Prof. Stillman, the Eminent Scientist and Professor of Chemistry of the Stevens Institute of Technology.

40 Broadway, New York, Jan., 1887.

Mrs. H. H. Ayer.

Dear Madam—Samples of your Recamier Cream and Recamier Balm have been analyzed by me. I find that there is *nothing* in them that will *harm* the most *delicate* skin, and which is not authorized by the French Pharmacopœia as safe and *beneficial* in preparations of this character. Respectfully yours,

Thomas B. Stillman, Mse., Ph.D.

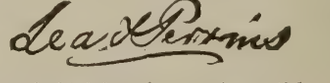
NEURALGIA, PLEURISY AND LUMBAGO.

The above-named maladies are among the most terrible scourges of civilized humanity. They seldom occur in savage life, but seem to develop to their fullest extent with refined and educated people. While not confined to any season of the year, they chiefly appear immediately after changes in the weather. Thus a draught, or getting the feet wet, or throwing off heavy bedclothes during the night, is frequently the occasion of an attack of any of these agonizing complaints. The nature of these disorders is somewhat complicated, but their cause is very simple. In the case of neuralgia, the blood which feeds and repairs the nerves is so filled with impurities that the nerve tissue becomes inflamed, unhealthy, and altered in character. In the case of pleurisy and lumbago, there are always neuralgic symptoms; but the chief characteristics are an inflamed and abnormal condition of the tissues in the neighborhood of the disordered nerve fibres, produced in the same manner by blood impurities, as in neuralgia. With each of these diseases the intensity of the evil is proportional to the amount of humors in the circulation, while its duration is proportional to the activity of the system in purifying itself of these poisonous elements. The body is compelled to burn up all the unnecessary matter it contains, and in this way the impurities which caused and likewise kept up the disease are consumed, until at last the patient has regained a poor imitation of health. The medical treatment of these complaints by the highest authorities among physicians conforms to nature so far as is possible. A low diet, warm or Turkish baths, and efficient blood-purifying medicines are all that to-day are employed. The low diet compels the physical organization to eliminate many of the impurities; the warm bathing cleanses the skin, opens the pores, and allows Nature both to allay inflammation and to excrete the largest possible amount of worn-out matters; and the blood purifier stimulates the excretory functions to expel from the circulation its deadly humors. Any other treatment than this is barbarous, unintelligent, and sometimes homicidal.

Owing to the development of modern science and industry, neither physician nor patient is put to any trouble in securing a good blood purifier. They have one always at hand in Ayer's Sarsaparilla, made by Dr. J. C. Ayer & Co., of Lowell, Mass. This is not only the best, but it is also the only great blood-purifier extant. It is not a nostrum, nor even a patent medicine, but a skillful combination of Honduras sarsaparilla, podophyllin, yellowdock, stillingia, and the double iodides. Unscrupulous dealers and manufacturers produce a worthless article which they call Sarsaparilla, and which too frequently they foist upon the unsuspecting as the genuine article. These preparations seldom rise to the dignity of being a poor copy of the original, but in nearly all cases are made from vile materials in the most careless and dangerous manner. Far from being blood-purifiers, they merely serve to injure the assimilative and excretory systems, and so to increase the trouble they are employed to cure. With a low diet, warm bathing, and Ayer's Sarsaparilla, neuralgia, pleurisy and lumbago lose all their terrors, and become an impossibility to the user.

LEA & PERRINS' SAUCE.

Lea & Perrins', the original and genuine Worcestershire Sauce, has been before the public over a half a century. Like all popular favorites it has long been the standard of comparison and the pattern for counterfeiters who not being able to imitate its excellence offer to the public imitations in bottling, labels and style of putting up. They dare not counterfeit the signature of Lea & Perrins which is on the red label of every genuine bottle, and of which this is a facsimile.



To be sure of obtaining the genuine article, see that the above signature is on the label.

VIBURNUM COMPOUND.

The therapeutic effect of the three principal ingredients of Viburnum Compound is specific and the combination has an effect still different from each.

A TOILET NECESSITY.

We owe much to the rapid development of applied chemistry and theoretical and practical medicine in the past twenty years. Thus, for example, under the "old school," a bad complexion was charged to some mysterious condition of the system or to humors of the blood, and the

sufferer put through a course of physic, which often injured the health and strength, and even at times permanently injured the constitution. It was not uncommon for medical practitioners to use mercury in some form in such large amounts as to initiate salivation and produce the other symptoms of poisoning by that dangerous element. To-day the model treatment consists in hot air, steam or other bathing, the application of a fine toilet soap and the liberal use of friction with the hand or with some soft woven tissue such as a Turkish towel. In the toilet soaps an equal change has occurred for the better. The kinds used in former years were characterless, such as white Castile and brown Windsor, coarse, though fairly made, such as dark Castile and Opodeldoc, or coarse and poorly made stuff whose only merit was extreme cheapness. The only fine articles were those produced by the great chemists of Paris, Berlin and London. These were excellent in quality, but exorbitant in price, and never came into general use.

To-day good toilet soaps are universal and reasonable in price. The process referred to keeps on, however, and the poorer qualities are being superseded by the better. The difference between a good and a superfine soap, slight though it seem at first, is quite large. The former cleans the surface of the body and does no more; the latter cleanses with equal efficiency, softens and whitens the skin, restores the pores and glands to a normal condition, stimulates the superficial tissues, and so produces a beautiful complexion or makes the latter more beautiful. Of the superfine toilet soaps of the world, the highest in quality of the entire list is the Althene Skin Soap. It is made from pure, fresh vegetable oils and sweet, wholesome animal fats, pure soda and fine perfume by skilled workmen and the latest machinery and mechanical processes. The finished soap is compact, handsome, uniform, pure and luxurious. It is durable and wears to a wafer without breaking or dissolving to a pulp. Its high finish and absolute purity make it a superb cosmetic, and so places it high up in the roll of toilet necessities.

GELATINE.

The gelatine manufactured by James Chalmers' Son is put up for family use in two-ounce packages, and as a food product is one of the finest articles known. Many years experience in its manufacture, and exclusive attention to this, the only product made by this firm, has enabled them to produce an article the equal of the very best and vastly superior to a great deal of so-called gelatine sold in this market. The price is somewhat lower than that of imported gelatine, and it is for sale by all first-class grocers. A careful examination of this gelatine and various chemical tests made in the laboratory of the AMERICAN ANALYST, enable us to assure our readers that this brand is entirely free from acids or any kind of adulteration; that no decomposition has been allowed to take place during its manufacture; that it contains no impurities whatever, has been carefully and conscientiously made from good materials, and is essentially a pure, wholesome and appetizing article of food. Its great purity, brilliancy and strength recommend it for general family use.

A REPRESENTATIVE FRENCH CONFECTIONER.

MAKES A SPECIALTY OF FINE CANDIES.

An old, well-known and most honorable house dealing in choice confectionery is that of which Mr. D. Arnould is the enterprising and capable proprietor.

The store and factory are most eligibly located at No. 17 Wooster Street, New York, and the establishment is thoroughly equipped for economical results, and has every facility for filling orders to the best advantage, and in the most expeditious manner.

The business was founded in 1865, and has been a gratifying success, and in consequence of the superior candies made by the house, the skill and taste displayed in their manufacture, and the use of pure material, has, during its more than twenty years of active business experience, built up a large and constantly increasing demand from the distributive trade, both in New York and its vicinity, as well as other leading cities and centres of population.

Included in the specialties of the house are extremely delicious and wholesome confections, such as chocolate cream drops, cream almonds, cream dates, cream eggs and filberts, burnt almonds, chocolate cream walnuts, fine caramels, cocoanut bon bons, sugar plums, French mixed candies, etc., etc.

The concern manufactures two hundred varieties of penny goods that are free from objectionable ingredients, and which have supplied a popular demand where higher-priced goods are only in moderate request.

GOOD WAGES—A DOLLAR AN HOUR.

Enterprising, ambitious people of both sexes and all ages should at once write to Stinson & Co., Portland, Maine, learning thereby, by return mail, how they can make $1 per hour and upwards and live at home. You are started free; capital not needed; work pleasant and easy; all can do it; all is new and free. Write and see, then if you conclude not to go to work, no harm is done. A rare opportunity. Grand, rushing success rewards every worker.

A LEADING HOUSE DEALING IN SAN BLAS COCOANUTS, FRUITS AND CONFECTIONERS' SUPPLIES.

A representative firm dealing in fruits, cocoanuts, etc., is that of Messrs. William Herron & Co., of No. 361 Greenwich Street, and 24 and 26 Harrison Street. The senior member of the house commenced business about thirteen years since in a limited way, but by honorable methods, reliable goods, and the courteous treatment of his patrons, he made a grand success. About a year ago, with a view to greater efficiency, a co-partnership was formed that adds materially to the thorough system which is essential to such a business as we have described. The individual members of the firm are very enterprising and able men, and they are at all times prepared to take advantage of the favorable conditions of the foreign markets, and give their customers the benefit of the lowest possible prices for goods of prime quality. They are extensive importers of and dealers in all kinds of nuts, San Blas cocoanuts, which are acknowledged to be the best grown, and they handle in large quantities. They also keep in liberal supply shelled nuts and confectioners' supplies. Their trade is very large in the Metropolis and suburbs, as well as throughout the entire country and British Provinces, and the firm stand deservedly high in mercantile and financial circles both at home and abroad. They have ample capital, and unexcelled facilities for carrying on their business to the best advantage.

Their stock of goods includes Jordan, Sicily, Canary, Valencia, Esperanza, Barbary, and bitter shelled almonds, Virginia, African and Spanish shelled peanuts, walnuts, and hickory nuts, glucose, grape sugar, dates, figs, chocolate, and an extensive variety of goods too numerous to mention. The house is established on a permanent foundation, and its future gives every evidence of continued success in the future.

BOVININE, BUSH'S FLUID FOOD,

Is the ORIGINAL and ONLY preparation of RAW FOOD that does not become putrid and disgusting in a short time.

A MOST WONDERFUL NUTRIENT.

The vital principles of Beef and Mutton concentrated. A highly condensed Raw Food Extract. Acceptable to the most delicate taste and smell. Retained by delicate stomachs that reject all other foods. It assimilates more readily than any other food known to the medical profession. Bovinine under the microscope shows the blood corpuscles in their normal condition strongly marked, while in other foods or extracts this vitally important element is destroyed by the action of heat in cooking.

Containing 26.58 Per Cent. of Soluble Albuminoids,

According to OSCAR OLDBERG, Ph.D., Professor of Chemistry and Toxicology, and Dean of the North-Western College of Pharmacy.

A. L. LOOMIS, M. D., Professor in Medical Department of University of New York, says: "I prescribe Bush's Fluid Food or BOVININE, and prefer it to similar preparations."

J. S. JEWELL, M. D., Chicago, says of Bovinine: "I am delighted with it; it is what I have been looking for these twenty years, and it supplies a want that nothing else has been able to fill."

DRS. WARD and FRED. SMITH, speaking for themselves and their colleagues of the Hospital of St. Barnabas, Newark, say: "Bovinine was readily taken by the patients, was easily retained, and in many cases by stomachs which had rejected all other forms of nourishment. We believe Bovinine contains more nutriment, relative to the bulk, than any other preparation known to the medical profession."

"During the last four months of his sickness, the principal food of my father, General Grant, was Bovinine and Milk; and it was the use of this incomparable food alone that enabled him to finish the second volume of his personal memoirs.—FRED. D. GRANT."

October 1st, 1885.

Carefully prepared from the formula of the late James P. Bush, by the J. P. Bush Manufacturing Co., 44 Third Avenue, Chicago, Ill.

PUT UP IN 6 AND 12 OUNCE SIZES, AT 60c. AND $1.00 PER BOTTLE.

For Sale by all Druggists.

Principal Office, 2 BARCLAY STREET, NEW YORK CITY.

OUR MISSION.

WHAT THE AMERICAN ANALYST IS DOING.

FIGHTING ADULTERATION.

The steadily growing favor which the AMERICAN ANALYST is constantly receiving at the hands of both the reading and the business public is the best evidence that could be afforded of the useful field of effort it occupies. It was the pioneer journal in this country to take up the fight against adulteration, and stands to-day, by public acknowledgment, the only competent exponent of the principles involved in that momentous struggle. To this end the realm of sophistication and fraud has been thoroughly explored, and its corruptions, as far as practicable, exposed to the public view. Charlatans, adulterators, and handlers of poisonous food have been summarily and uncompromisingly dealt with. Humbugs seeking to enrich themselves, through the sale of high-sounding specifics for human ailments, have been subjected to the crucial test of thorough chemical analysis of their goods, and where the latter, as too frequently occurred, proved to be utter frauds in name, composition, and pretended effects upon the system, the real facts have been placed before our readers in order to save the public from further unconscious imposition. The veil of chemical mystery in which tricksters of this kind ostentatiously envelop their processes of manufacture, protects them as yet from the criminal laws to which other confidence operators are held amenable, and the only method for counteracting their nefarious schemes is through public exposure by the newspaper press. In exposing this species of fraud, the AMERICAN ANALYST has conferred a benefit upon the community, to which the latter is giving grateful and substantial recognition.

SANITARY AND FOOD REFORMS.

In addition to the foregoing, the AMERICAN ANALYST is in constant co-operation with the Boards of Health of this and other cities, in efforts to secure sanitary and food reforms through organized methods, and while it is nobody's mouthpiece, it is conceded to be the only popular medium through which those bodies can bring their purposes and action intelligently before the general public. Reaching as it does all classes, manufacturers, merchants, physicians, chemists and private families all over the land, its influence is exerted over a vast radius, producing results as visibly marked as they are widespreading.

HOUSEHOLD MATTERS.

"Domestic Dietetics" is a department of special interest to ladies. It is very different and far superior to the ordinary cook book in that it tells the housewife suggestively what to buy, what foods are in season, as well as how to prepare the many varieties of dishes, all in a practical way easily followed. Other matters of great interest to housewives are also discussed.

PRACTICAL DISCUSSIONS.

Numerous other interests are also faithfully represented in our columns, such as the regular series of articles entitled, "Some Every Day Suggestions," relating to common experiences of society, the question of hygiene, and an infinite variety of practical subjects. In short, the AMERICAN ANALYST always keeps abreast in giving the fullest information on all matters directly or indirectly in the line of its proper field.

SCIENTIFIC INVESTIGATION.

The business transacted in the office of the AMERICAN ANALYST does not by any means all come to the surface in the pages of the paper. Minute analyses of chemical compounds, careful assays of minerals, examinations of questionable oils or doubtful condiments, and the many subtle operations incident to laboratory work are constantly required of us by correspondents far and near, and the results in many cases are not publicly recorded. In this manner, the influence of the paper encompasses a vast radius, from every point of which we receive constant expressions of approval, verbally, and in more substantial shape.

SUBSCRIPTION $1 PER YEAR.

Considering the amount of practical information regularly embodied in its contents, together with the fact that the subscription price for an entire year is only one dollar we believe the day is approaching when the AMERICAN ANALYST will be regularly welcomed in every intelligent household in the land. Address,

ANALYST PUBLISHING CO.,
19 *Park Place, N. Y.*

$85 Solid Gold Watch Free !

This splendid, solid gold, hunting-case watch, is now sold for $85; at that price it is the best bargain in America; until lately it could not be purchased for less than $100. We have both ladies' and gents' sizes with works and cases of equal value. **ONE PERSON** in each locality can secure one of these elegant watches absolutely **FREE.** These watches may be depended on, not only as solid gold, but as standing among the most perfect, correct and reliable timekeepers in the world. You ask how is this wonderful offer possible? We answer—we want one person in each locality to keep in their homes, and show to those who call, a complete line of our valuable and very useful HOUSEHOLD SAMPLES; these samples, as well as the watch, we send ABSOLUTELY FREE, and after you have kept them in your home for 2 months, and shown them to those who may have called, they become entirely your own property; it is possible to make this great offer, sending the **Solid Gold Watch** and large line of valuable samples FREE, for the reason that the showing of the samples in any locality, always results in a large trade for us; after our samples have been in a locality for a month or two, we usually get from $1,000 to $5,000 in trade from the surrounding country. Those who write to us at once will receive a great benefit for scarcely any work and trouble. This, the most remarkable and liberal offer ever known, is made in order that our valuable Household Samples may be placed at once where they can be seen, all over America; reader, it will be hardly any trouble for you to show them to those who may call at your home, and your reward will be most satisfactory. A postal card, on which to write us, costs but **1** cent, and if, after you know all, you do not care to go further, why no harm is done. But if you **do** send your address at once, you can secure, FREE, AN ELEGANT **$85,** SOLID GOLD, HUNTING-CASE WATCH and our large, complete line of valuable HOUSEHOLD SAMPLES. We pay all express, freight, etc.

Address, STINSON & CO., BOX 356 PORTLAND, MAINE.

SILK AND SATIN RIBBONS FREE !

LADIES, THIS IS FOR YOU !



A rare gift for the ladies. Save much money and secure the best! Every lady knows and appreciates, the privilege of having a few remnants of ribbon, handy for the thousand and one tasty and useful purposes for which such goods are used, and which they, the ladies, use to such advantage. To purchase what is wanted at the usual prices such goods are sold for, would create a large bill of expense, and therefore debars a **great** many from indulging **their** tastes in this direction. Realizing that there were thousands upon thousands of remnants of ribbons among the **large** importing houses of America which they would be willing to dispose of in bulk, for a small fraction of their cost, to any one capable of purchasing largely, we instituted a search, resulting in our obtaining the entire stock of **Silk** and **Satin Ribbon Remnants** of several of the largest of these houses, who imported the finest goods. These goods may be depended upon as superior to anything to be found, except in the very best stores of America. Yet they are given away **free;** nothing like it ever known. A grand benefit for all the ladies; beautiful, elegant, choice goods absolutely **free.** We have expended thousands of dollars in this direction, and can offer an immensely, varied, and most complete assortment of ribbons, in every conceivable shade and width, and all of excellent quality, adapted for neck-wear, bonnet strings, hat trimmings, bows, scarfs, dress trimmings, silk quilt work, etc., etc. Some of these remnants range three yards and upwards in length. Though remnants, all the patterns are new and late styles, and may be depended on as beautiful, refined, fashionable and elegant. **How to get a box containing a Complete Assortment of these elegant ribbons Free. The Practical Housekeeper and Ladies' Fireside Companion,** published monthly by us, is acknowledged, by those competent to judge, to be the best periodical of the kind in the world. Very large and handsomely illustrated; regular price 75 cts. per year. Send **35** cents and we will send it to you for a trial year, and will also send **free** a box of the ribbons; 2 subscriptions and 2 boxes, **65** cts.; 4 subscriptions and 4 boxes, **$1.** One-cent postage stamps may be sent for less than $1. Get 3 friends to join you thereby getting 4 subscriptions and 4 boxes for only $1; can do it in a few minutes. The above offer is based on this fact:—those who read the periodical referred to, for one year, want it thereafter, and pay us the full price for it; it is in after years, and not now, that we make money. We make this great offer in order to at once secure 250,000 new subscribers, who, not now, but next year, and in years thereafter, shall reward us with a profit, because the majority of them will wish to renew their subscriptions, and will do so. The money required is but a small fraction of the price you would have to pay at any store for a much smaller assortment of far inferior ribbons. Best bargain ever known; you will not fully appreciate it until after you see all. Safe delivery guaranteed. Money refunded to any one not perfectly satisfied. Better cut this out, or send at once for probably it won't appear again. Address,

H. HALLETT & CO., PUBLISHERS, PORTLAND, MAINE.

ESTABLISHED 1872.

GELATINE.

JAMES CHALMER'S SON'S

Transparent Gelatine.

PURITY—STRENGTH.

Best for Family Use.

Jellies, Blanc Mange, Etc.

ACKNOWLEDGED BY EVERY ONE EQUAL TO THE BEST.

All Postmasters will receive subscriptions for the **AMERICAN ANALYST.**

OUR SPECIALTIES ARE

Choice Bottled Ciders

—AND—

Pure Cider Vinegar,

For Hotel and First-Class Trade.

T. P. ROGERS & SON,

370 to 376 Washington Street,

NEW YORK.

TORSION BRAIDED WIRE MATTRESSES

AND PILLOWS.

THE BRAIDED WIRE MATTRESS

complete in itself, requiring no hair or other mattress or spiral springs or woven bed bottom.

It cannot absorb odors, become musty or retain perspiration or disease germs, the covering being so arranged that it can be removed and washed.

It is as soft and fresh as feathers or any other material, and cannot become heated, as each slight movement changes the air beneath, while the temperature can be regulated by placing over it any desired amount of covering.

As a luxury nothing can surpass it, especially in warm weather.

No material is used that will attract bugs, moths or other insects.

No dust can be collected and retained to puff out through the covers when bedding is shaken or beaten. To secure an absolutely comfortable, sweet and pure resting place for the body during nearly one-third of the natural life which is spent in bed, is one of the most important objects of thought and care, for upon healthful sleep depend all the successes and pleasures of our waking hours.

Send for Circular.

THE TORSION BRAIDED WIRE UPHOLSTERING CO.,

No. 1017 Chestnut Street.

PHILADELPHIA, PA.

Natural Lithia Water.

FARMVILLE LITHIA WATER

FROM VIRGINIA.

—Not only Relieves, but—

CURES

Bright's Disease, Kidney Troubles of all Kinds, Rheumatism, Rheumatic Gout, Dyspepsia, Bladder Troubles, Diabetes, Calculi, Albuminuria. Without Taste or Odor. An Unapproachable Record in Results.

Sold by HAZARD, HAZARD & Co., Fifth Avenue Hotel, and other first-class Pharmacists. Pamphlet free upon application.

FARMVILLE LITHIA SPRINGS CO.,

298 Broadway, New York, and Philadelphia.

Subscriptions $1 per year. Now is the time to subscribe.

J. HENRY HENTZ. J. P. ROBINETT. J. HENRY HENTZ, Jr.

ESTABLISHED 1793.

WHITE, HENTZ & CO.,

SOLE PROPRIETORS OF

Trimble and Pennsylvania Monogram Whiskies.

222 and 224 NORTH SECOND ST., PHILADELPHIA.

D. LIEBER, 17 South William St., New York. Col. H. A. SELIGSON, 1200 Pennsylvania Ave., Washington, D. C.

THE OLDEST.

THE GENUINE EAU DE BOTOT BOTOT WATER
THE ONLY DENTIFRICE APPROVED BY THE ACADEMY OF MEDICINE OF PARIS, FRANCE.



FOR MORE THAN A CENTURY IN GENERAL USE IN EUROPE.
SOLE AGENT FOR THE UNITED STATES, FREDERIC REISET, 44 BEAVER STREET, NEW YORK.

THE BEST.

SEND

YOUR WIFE

THE

American Analyst.

$1.00 A YEAR.

CALIFORNIA

Fine Table Wines

From our Celebrated Orleans Vineyard.

Arpad Haraszthy & Co.

Producers of the

ECLIPSE CHAMPAGNE,

530 Washington St. SAN FRANCISCO.

PARK & TILFORD, New York, C. JEVNE & CO., - - Chicago, } Agents.



BATES' WAIST

Mrs. E. M. VAN BRUNT,

DRESS REFORM PARLORS,

39 East 19th St., N. Y. City.

Hygienic and Artistic Underwear for Men, Women and Children.

FALL AND WINTER

Jersey-fitting Undergarments in Silk, Jaeger Wool, and Merino. In stock or made to order.

Good-Sense Waists for all ages. Breakfast Corsets, Dr. Warner's Health Corset, Jackson Waist, Mme. Clark Corset, Corset for Thin Women, Skirt and Stocking Supporters, Abdominal Bandages, Double V Waists, Sanitary Towels, Bustles, Dress Reform Waists, Comfort Waist Corsets of all brands. Send for *Dress Reform Quarterly*, mailed free. Dress Reform Patterns. Orders by mail a specialty.



ESTABLISHED 1857.

J. H. CUTTER,

OLD

BOURBON AND RYE WHISKIES.

We are the Sole Owners and Proprietors of this Celebrated Brand of Whiskey.

C.P. MOORMAN & CO. LOUISVILLE, KY.

We Guarantee the Superior Quality and Absolute Purity of every Barrel of Whiskey sold by us under this Brand.

W. P. FESSENDEN, Agent for N. E. States, Maryland and Penn., 11 Central St., Boston.

A BUSINESS BENEFIT.

ADVANTAGES TO ADVERTISERS OFFERED BY THE AMERICAN ANALYST.

It has not the limitations of a daily paper. No one reads yesterday's paper. A monthly lives at least a month, while a semi-monthly is fresh twice a month, and its audience is not limited by geographical lines, but the circulation is all over the United States and Canada.

It contains matters of interest to everyone, especially the ladies of the household, and is, therefore, sure of a careful perusal. Our audiences are intelligent and of the better classes, who have money to spend, and any well worded advertisement in our columns, giving real information, will receive a careful perusal.

Our rates are as low as our circulation affords. Large circulation and original matter cost money, and those advertisers who desire to realize these benefits must expect to pay reasonably for them.

Advertisements in our columns are permanent. Most of our subscribers bind their numbers.

Our advertisements are set up in an attractive form, sure to call the attention of the reader.

Anything that our readers want, or for which a demand is to be created, not wholly of a local nature, will pay to advertise with us.

We take only advertisements from legitimate houses of really meritorious goods, and give them all the editorial assistance they deserve; consequently our readers knowing this, have confidence in advertisements contained in our columns.

The fact that we have the best and largest houses in every branch of trade advertising with us, and that they always renew as their seasons arrive, proves beyond a doubt that they have found the AMERICAN ANALYST a good advertising medium. Why should not you?

Any Book published can be procured upon application to

THE AMERICAN ANALYST,
19 Park Place, N. Y.

"ROYAL" SALAD DRESSING,
PURE AND WHOLESOME.
Always Fresh, does not turn Oily or Rancid.
"ROYAL" WORCESTERSHIRE SAUCE,
The Peer of American Manufacture.

PURITY. EXCELLENCE.

"CROWN" CELERY SPICES, TOMATO CATSUPS.
Pure Flavoring Extracts, Etc.

HORTON, CATO & CO.,
SOLE PROPRIETORS & MANUFACTURERS,
DETROIT, MICH.

"BILLET"

are

Carefully Selected French Sardines, Packed in Choicest Olive Oil.

AT ALL LEADING GROCERS.

FANNY DAVENPORT.

A LETTER TO THE PUBLIC FROM THIS ACCOMPLISHED ACTRESS.

PROVIDENCE, April 7th.

MY DEAR MADAM,—Purely by accident one day in Chicago I bought a pot of your Cream, because the jar was so pretty, and on trying it found it the most delightfully refreshing thing I have ever applied to my skin. Most assuredly you have made a marvellous discovery, and one and all of our sex should heartily thank you. I find it is not only a refreshing, softening article for the skin at night, but for the day use also. Please send me some of the Balm and another jar of the Cream to the Brunswick, Boston, and believe me, very thankfully yours. FANNY DAVENPORT.

Mrs. Ayer's assurance of the efficacy of the Recamier preparations has brought these justly celebrated articles into universal use by all women, old and young. They are in no sense cosmetics, as evidenced by their winning the first prize at the American Exhibition in London, 1887. Mrs. Ayer used them herself for years before the necessity arose to manufacture them for sale. The Recamier Cream and Lotion will remove pimples, blackheads, liver spots and all of the various imperfections which render their victims hideous and repulsive, alike to men and women. Recamier Powder is the purest powder ever made. It will not rub off or make the face shine. (A sample will be mailed you free on application if you mention this paper.) Recamier medicated soap is the purest and best. Madame Patti, in a letter of recent date, declares it excels all others. Any woman wishing to preserve a healthy body, firm to the touch and fair to the eye, with the elasticity of youth well prolonged into age, should sponge the entire body with Recamier lotion after the daily bath. Refuse all substitutes for the Recamier preparations, even though represented "just as good." Several women have been severely injured by those fraudulent imitations made to sell on the reputation of the genuine articles.

Subscriptions $1 per year. Now is the time to subscribe.

UNEQUALLED Ask your Grocer for, and insist on having, LEA & PERRINS' Sauce, "The Worcestershire." It is known throughout the whole civilized world as the Best and most Delicious Sauce. DELICIOUS.

SCOTCH MARMALADE, Jams, Fruit and Wine, Jellies, &c.
By James Keiller & Son, Dundee.
SCOTCH BISCUITS, Albert, Water, and Oat Cake,
By Robert Middlemass & Son, Edinburgh.
RACAHOUT des Arabes, by De Langrenier, Paris.
BAY WATER, West India, (J. D. S. brand), in cases, one dozen bottles.
Sold by all first-class Grocers.
JOHN DUNCANS' SONS, 43 Park Place, New York. Agents for the United States.

THURSTON'S IVORY PEARL TOOTH POWDER
WILL KEEP THE TEETH IN PERFECT CONDITION AND THE GUMS HEALTHY.
Price 25 & 50 Cents PER BOTTLE.

ALTHENE SKIN SOAP

An absolutely pure and perfect soap for all purposes of the toilet, nursery, bath or sick-room. Has the approval of leading chemists and physicians, and is recommended by all who have used it. Price 25 cts. a cake, or 65 cts. for a box of three. Can be obtained of the retail druggists or from

J. W. CAMPION & CO., 916 Filbert Street,
PHILADELPHIA.

GOLD You can live at home and make more money at work for us than at anything else in the world. Either sex; all ages. Costly outfit FREE. Terms FREE. Address, TRUE & CO., Augusta, Maine.



These Goods are "Par Excellence,"
Pure, Healthful and Reliable, warranted to give satisfaction in every particular.
For sale by wholesale and retail grocers throughout the United States. VOUWIE BROS., Manufacturers, CLEVELAND and CHICAGO.

Robert Gordon's
TRADE MARK.
SPICED · SEA · FOODS
(IN GLASS.)
OYSTERS, LITTLE NECK CLAMS, MUSSELL, SHRIMP, LOBSTER, Etc.,
Packed in 8 and 16 oz. Jars. Guaranteed to be strictly Pure.
MADE OF THE FINEST MATERIALS.
—ALSO,—
ROBERT GORDON'S CONDENSED CLAM CHOWDER,
In 3-lb Cans. Cheapest and Best in the Market.
MANUFACTURED BY
JONES, GORDON COMPANY, Limited,
204 West Street, New York.

"HUNTER'S INVISIBLE"
MEDICATED FACE POWDER.
An Exquisitely Delicate Preparation
For Beautifying the Complexion.
DELIGHTFULLY FRAGRANT. PERFECTLY HARMLESS.
Flesh, Pearl, Blonde and Brunette Tints.
The Closest Scrutiny Fails to Detect its Use!
25 CENTS EVERYWHERE. BEWARE OF IMITATIONS.

ESTERBROOK'S STEEL PENS
Leading Numbers 14,048,128 130, 135, 333, 161.
—For sale by all stationers.—
THE ESTERBROOK STEEL PEN CO., 26 John St., N. Y.
WORKS · CAMDEN, N. J.

FAT CORPUS LEAN *will reduce fat at the rate of 10 to 15lbs. per month without affecting the general health. 6c. in stamps for circulars covering testimonials.* S. E. MARSH CO., 2315 *Madison Sq., Philadelphia, Pa.*
MADE ABSOLUTELY HARMLESS *simply stopping the FAT-producing effects of food. The supply being stopped the natural working of the system draws on the fat and at once reduces weight.* LEAN

Good Subscription Agents wanted by AMERICAN ANALYST.

NATRONA BI-CARBONATE OF SODA.

(ABSOLUTELY PURE.)



The nature of the raw material from which NATRONA BI-CARBONATE OF SODA is made—viz., kryolith, a mineral containing *pure sodium*—insures a purity and uniformity of product which cannot be obtained from any other known material. In making BI-CARB. SODA from any other raw material, the use of sulphuric acid is a necessity, but none is used in any part of the process of making NATRONA BI-CARB.; hence its entire freedom from the slightest trace of arsenic, which is always present in ordinary soda. Its absolute purity and entire freedom from all traces of *sulphate of soda*, common salt and other impurities, render NATRONA BI-CARB. NEARLY TASTELESS, and being bolted through the finest bolting-cloth, insures the finest stage of division.

To these indisputable facts the attention of CONSUMERS of soda is specially called. They are IMPORTANT, and should influence both those who use and those who sell soda, to buy and sell NONE BUT THE BEST.

The NATRONA BI-CARB. Soda is kept in stock by almost every wholesale druggist and grocer throughout the United States, of whom it may be ordered.

Natrona Bi-Carb. Soda is unequaled by any other brand of English or American Manufacture.

PENNA. SALT MANUFACTURING CO.,

NATRONA CHEMICAL WORKS. PHILADELPHIA, PA.

CARNRICK'S SOLUBLE FOOD

FOR INFANTS AND CHILDREN.
For Mothers, Invalids, Dyspeptics & Aged People.



THE ONLY FOOD *that digests as easily as human milk, and agrees with all infants and children.*

THE ONLY FOOD *that thoroughly nourishes the child without the addition of cow's milk.*

THE ONLY FOOD *that removes from infancy all necessity, danger and annoyance of a wet nurse.*

TAKEN BY MOTHERS *once or twice a day the quantity of milk will be increased and quality at once improved.*

IF THE CHILD IS RESTLESS, *change partially from nursing to* **SOLUBLE FOOD.**

DR. STUTZER, Food Analyst for Rhenish Prussia, says: "CARNRICK'S SOLUBLE FOOD is the best of all the foods I have ever examined."

"OUR BABY'S FIRST AND SECOND YEARS," by Marion Harland. Book of 64 pages, giving careful instructions for bringing up the little ones. Sent free by

REED & CARNRICK, N. Y.



LADIES

Enamel your Ranges twice a year, tops once a week and you have the finest-polished stove in the world. For sale by all Grocers and Stove Dealers.



GOLD MEDAL, PARIS, 18[illegible]

BAKER'S

Breakfast Cocoa.

Warranted *absolutely pure Cocoa,* from which the excess of Oil has been removed. It has *three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup.* It is delicious, nourishing, strengthening, easily digested, and admirably adapted for invalids as well as for persons in health.

Sold by Grocers everywhere.

W. BAKER & CO., Dorchester, Mass.

Sura Cura

ROBINSON'S SURE CURE FOR

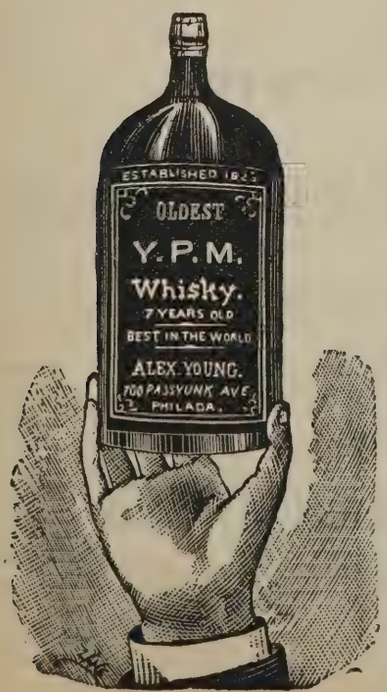
RHEUMATISM

And NEURALGIA,

And remedy for diseases arising from an impure state of the blood. An antidote for **MALARIA.** Price 50 c. and $1. Sent by mail on receipt of price. Send for Circular.

R. W. ROBINSON & SON,
184 Greenwich Street,
NEW YORK.

Sura Cura



ESTABLISHED 1823.

ALEX. YOUNG CO., Limited

DISTILLERS OF

Y. P. M. WHISKIES

DISTILLERY,

Nos. 408, 410, 412 and 414 South Street

MALT HOUSE,

416, 418, 420, 422 and 424 South Street,

STORE,

No. 700 Passyunk Avenue.

PHILADELPHIA, PA.

ARMOUR & CO.

CHICAGO, ILLS.

PACKERS OF

Pork and Beef Products

CANNED MEATS,

ETC.,

FOR HOME CONSUMPTION AND FOR EXPORT

TO ALL PARTS OF THE WORLD.

Also,

SHIPPERS OF

Choice Dressed Beef,

MUTTON AND HOGS,

In Refrigerator Cars,

To BOSTON,
NEW YORK,
PHILADELPHIA,
BALTIMORE,

And other cities throughout the country.

GILBERT S. GRAVES

STANDARD

STARCH.

MANUFACTURED WITH ENTIRELY NEW MACHINERY AND BY LATEST IMPROVED PROCESS.

IT IS GUARANTEED to be fully equal to BRANDS SOLD AT FANCY PRICES, and MUCH SUPERIOR TO STARCH SOLD AT EQUAL PRICES.

THE MIRROR GLOSS

Is the finest Starch made for the Laundry, and cannot be excelled. It will not injure the finest Laces.

THE CORN STARCH

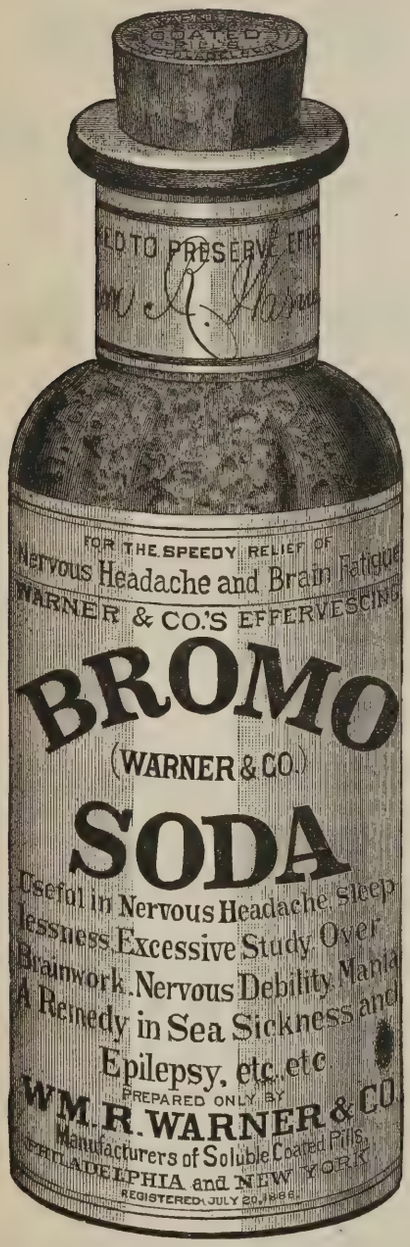
For culinary purposes is prepared with the greatest care, from selected Corn, and is a most delicious and wholesome article of food.

ASK YOUR GROCER FOR IT.

A DOSE OR TWO

WILL QUICKLY CURE

NERVOUS HEADACHE.



A Cure for Sick Headache.

A CURE FOR

SLEEPLESSNESS.

A CURE FOR

SEA-SICKNESS.

PURITY AGE STRENGTH

The "Best" Tonic

A Concentrated Liquid Extract

OF

MALT AND HOPS.

Invigorating

and

Nutritious.



INSURES

A

Healthy Appetite

—AND—

AIDS DIGESTION.

STRENGTHENS THE SYSTEM.

One of the Most Efficacious Remedies for Dyspepsia.

INDISPENSABLE FOR NURSING MOTHERS. THE MOST WHOLESOME TABLE BEVERAGE.

The "BEST" Tonic is manufactured from the Best Malt and Choicest Hops and neither Alcohol, Spirits nor Chemicals of any kind are used in its preparation.

MANUFACTURED ONLY BY

Specialty Department, **PHILLIP BEST BREWING CO.,**

Eastern Depot, 28 College Place, N. Y.

General Office, - - - - MILWAUKEE, WIS.

SWIFT'S

Choice Chicago Dressed Beef

—AND—

MUTTON.

CAN be found at all times in full supply and at popular prices at the branch houses in all the larger cities and is ***retailed by all first class butchers.***

The trade of all marketmen and meat dealers is solicited for our Wholesale Branch Houses, and the ***public may rest assured*** *that in purchasing our* ***meat*** *from dealers they will* ***always receive the best.***

SWIFT AND COMPANY,

UNION STOCK YARDS,

CHICAGO, ILLS.

Tabasco Pepper Sauce

OR LIQUID PEPPER.

Is simply the Pulp of the Ripe Pepper Extracted by Pressure.

The seed of this Pepper was obtained from Central America, and by careful cultivation in Louisiana for many years has been so improved in strength, flavor and aroma, as to have become a new variety of Red Pepper, superior to all others. The pulp is so handled as to retain all the flavor, strength, aroma and color of the ripe fruit, and to keep unimpaired in any climate. It excites the appetite, promotes digestion, and is pronounced, by connoisseurs, to be the finest condiment in the world. For medicinal purposes it recommends itself by its purity, strength and diffusible form.

Manufactured by E. McILHENNY,

NEW IBERIA, LA.

For Sale by all Wholesale Grocers.

ON THE USE OF PURGATIVES.

BY CHARLES A. HOFF, M. D., ST. LOUIS, MO.

Of all preparations contained within the *pharnacopœia,* there are none, apparently, held in higher esteem by mankind than that class of medicines, commonly known as purgatives The busy practitioner confidently prescribes them with variable frequency, singly and combined, from the date of the writing of his very first prescription to that of his last; and the corner druggist rarely sees a day pass over his head on which he does not greet the customer who has called around to get "something to act upon his bowels." Indeed, the inevitable purgative awaits the tiny baby screaming in its first attack of colic; it is resorted to by the invalid weighted down with years of suffering and disease; and it is by no means despised by the individual in robust health, when assailed by the various petty ills, which even the most vigorous seldom entirely escape.

Notwithstanding the fact that purgatives are so generally prescribed by the physician, and so frequently resorted to without advice by the patient, they are not altogether incapable of doing harm. As everybody knows, the habit of purging the system repeatedly with salines, cholagogues, hydragogues, or drastics, is a most pernicious one; and the physician who fails to exercise a proper care, both in the selection and the administration of cathartics will sooner or later bankrupt the health of his patients as well as his own hard earned reputation.

Constipation is a complication of so many disorders, a symptom of so many diseases that its treatment in different cases depends upon very different considerations. For a simple, ordinary attack, the average doctor has been accustomed to use a simple purge, such as castor oil, sulphate of magnesia, rhubarb, senna, aloes, colocynth, blue pills, etc.; yet in none of these, can it be truly said, has there been found all that could be wished for, even in so simple a matter as a laxative. Where can we find the physician who has not been vexed and annoyed at the complaints of his patients against the purgative medicines he has been accustomed to prescribe. Some people there are who can not or will not swallow pills; many object to the nauseating castor oil; not a few oppose the use of salines since they are disagreeable both in taste and effect; many look upon all resinous cathartics as objectionable on account of their so called heating properties; aloes is objected to in pills and especially in pregnancy; elaterium is said to be excessively harsh and severe, croton oil is known to be dangerous; podophyllin causes an undue amount of griping; blue mass is avoided on general principles; and so on to the end of the chapter.

Fortunately, however, tho physician of the present need no longer be placed in a dilemma when called upon to prescribe a preparation free from the faults enumerated in connection with ordinary purgatives. The pharmacist has bravely come to his aid with a formula of incomparable excellence; and this preparation, a combination of "manna, purified cathartic acid and fruit juice," although but recently brought to the notice of the medical world, is, nevertheless, already regarded as a most valuable addition to the resources of medicine.

The happy thought that suggested the combination known as the Rio Chemical Co.'s Acid Mannate justly challenges unlimited admiration and esteem, and has thus far evoked from the profession an almost universal verdict of commendation and praise. Prompt, mild and certain in its action, Acid Mannate may well be considered an ideal remedy in the constipation of pregnancy. Being pleasant to the taste, and continuing its good work without increased dosage, it is pre-eminently adapted to cases of habitual constipation. Indeed, in its wide range of adaptability as an aperient medicine it is impossible to exaggerate its importance, or allude either directly or indirectly to the vast variety of its beneficial, therapeutical properties.

The importance of laxatives is probably nowhere appreciated so much as in the constipation of pregnancy; and it is to this fact, no doubt, more than to any other, that Acid Mannate owes its great popularity and fame among remedial agents. The testimony of thousands of honorable medical gentlemen leading us to believe that, through the beneficent effect of this same elegant formula, constipation need not hereafter, as in the past, be regarded as one of the most troublesome attendants upon gestation. Moreover, the atrocious female pill of unknown composition but of dire effect, which has deluded the drug market for ages, we may consider as having had its day; and it is to be hoped that, since the physician is now in possession of a purgative especially suited to the period of gestation, female life will be less frequently harassed by the ails and aches said to be peculiar to the sex; and that miscarriages, displacements, granular erosions, congestions, headaches, dyspeptic and hypochondriacal attacks, and the whole long train of aches, pains and nervous ills will grow less familiar to the medical profession in the same ratio that the physician increases his familiarity with the actions of Acid Mannate.

A full sized bottle of Acid Mannate will be sent free to any Physician who desires to test it, if he will pay the express charges and mention this Journal, on application to the

RIO CHEMICAL CO.,
St. Louis, Mo.

GORDON & DILWORTH

MANUFACTURING PURVEYORS

Established 1847

ALIMENTARY PRODUCTS

ALL OF OUR PRODUCTIONS BEAR THIS TRADE MARK

WE WILL PROSECUTE ALL INFRINGEMENTS & IMITATIONS







CHOICE DESSERTS

OVER 100 DOMESTIC & FOREIGN FRUITS AND VEGETABLES TRANSMUTED INTO TABLE DELICACIES

PRICES ON PRESERVED FRUITS REDUCED 1ST DEC. 1885

PRESERVED, CANNED & BRANDY FRUITS, FRUIT JELLIES, VEGETABLES, TOMATO CATSUP, SYRUPS & JAMS, SALAD DRESSING, BLACKBERRY BRANDY, MINCE MEAT, PLUM PUDDING, SWEET PICKLES, OLIVES & CAPERS, WINE JELLIES, MARMALADE, SOUPS, SAUCES &c.

SOLD BY THE LEADING GROCERS ON THE AMERICAN CONTINENT.

QUINA-LAROCHE

A STIMULATING, RESTORATIVE AND ANTI-FEBRILE

VINOUS ELIXIR

OF THE THREE CINCHONA BARKS.

A most powerful restorative in all cases where Cinchona is indicated,

As MALARIA, EXHAUSTION, SLOW CONVALESCENCE, GENERAL DEBILITY, Etc.

LAROCHE'S QUINA possesses in the highest degree the restorative and invigorating qualities of Cinchona, which is the best known medicine for giving tone to the digestive organs. It succeeds completely in removing LANGUOR, WEAKNESS, WASTING DISEASES, WANT OF APPETITE, and for FEVER AND AGUE IT IS ONE OF THE BEST SPECIFICS.

FOR SALE BY ALL DRUGGISTS.

E. FOUGERA & CO.,

PARIS, 22 RUE DROUOT. Sole Agents for the United States.

D. G. Cook, Pres.

AMERICAN WINE CO.,

ST. LOUIS.

COOK'S IMPERIAL

Press House and Wine Cellars, SANDUSKY, OHIO.



Office and Salesroom, Wine House and Vaults, 3015 TO 3021 CASS AVE.

Pure Still Wines.

GREENWAY'S PORTER

—AND—

DOUBLE AND EXTRA DOUBLE STOUT.

GREENWAY'S SALE INDIA PALE

IN GLASS OR WOOD

ENGLISH TRADE MARK.

SEND FOR CIRCULARS.

FULLY EQUAL TO THE BEST IMPORTED. FOR FAMILY OR CLUB USE. RECOMMENDED BY OUR BEST PHYSICIANS FOR SALE BY ALL FIRST CLASS GROCERS AND DEALERS.

THE GREENWAY BREWING CO. SYRACUSE, N.Y.

Greenway Bottling Co.,

BOTTLERS OF

GREENWAY BREWING CO'S BRANDS OF ALE, PORTER, DOUBLE STOUT

—AND—

Germania Brewing Co's Standard Pale Crown Lager & Culmbacher.

N. Y. Depot, 31 Broadway.

ESTABLISHED IN LONDON 1831.



W. G. DEAN & SON,

—MANUFACTURERS OF—

PASTE AND STICK

LICORICE

PURE CALABRIA, Equal to the Imported

Try our SICILY (brand select).

BEST IN THE MARKET.

Also LICORICE TABLETS.

361 & 363 Washington Street,

And 84, 86 & 88 North Moore St.,

W. G. DEAN, HARRY W. DEAN. } NEW YORK.

—THE—

CHRISTIAN MOERLEIN

Brewing Co.,

CINCINNATI, U. S. A.,

Brewers of the far-famed

"NATIONAL" EXPORT

(The Queen of Beers)

LAGER.

Owing to its absolute purity, beautiful pale color, fine aroma and nutritious qualities, the above beer has become the PRIME FAVORITE in all the principal hotels and clubs, and in thousands of families throughout the West and South.

Pure LAGER BEER,

"IMPERIAL" and "CULMBACHER"

Brewed & Bottled SPECIALLY FOR HOTELS, CLUBS AND PRIVATE FAMILIES

—BY—

Beadleston & Woerz

291 W. 10th St. New York.

Orders by Postal Card promptly attended to.

H. CLAUSEN & SON

BREWING CO'S

CHAMPAGNE LAGER BEER,

ROYAL EXPORT LAGER,

EAST INDIA PALE ALE,

EXTRA AMERICAN STOUT.

Bottled for Family Use and Export by

PHŒNIX BOTTLING CO.

888 and 890 Second Avenue,

Bet. 47th and 48th Streets,

NEW YORK.

Order from your Grocer, or direct from us.

FULL WEIGHT PURE

DR. PRICE'S CREAM BAKING POWDER

MOST PERFECT MADE

Its superior excellence proven in millions of homes for more than a quarter of a century. It is used by the United States Government. Endorsed by the heads of the Great Universities as the Strongest, Purest, and most Healthful. Dr. Price's Cream Baking Powder does not contain Ammonia, Lime or Alum. Sold only in cans.

PRICE BAKING POWDER CO.
NEW YORK. CHICAGO, ST. LOUIS.

N. K. FAIRBANK & CO'S
FAIRY SOAP.

A PERFECTLY PURE WHITE FLOATING SOAP.

DESIGNED EXPRESSLY TO USE IN TOILET, BATH AND NURSERY.

Admirably adapted to every requirement of the Household.

DAINTY AND DELICATE FOR ALL WASHING PURPOSES

For sale by all First-class Grocers and Druggists.

N. K. FAIRBANK & CO.,

CHICAGO, ST. LOUIS, NEW YORK, OMAHA.



Subscriptions $1 per year. Now is the time to subscribe.

PEACOCK'S BROMIDES

(SYR: BROM: COMP: PEACOCK)

NERVE SEDATIVE.

Each fluid drachm represents 15 grains of the Combined C. P. Bromides of Potassium, Sodium, Calcium, Ammonium and Lithium.

USES:—EPILEPSY, and all CONGESTIVE, CONVULSIVE, and REFLEX NEUROSES.

This preparation has stood the test of time and experience, and can be relied upon to produce results, which can not be obtained from the use of commercial bromide substitutes.

DOSE:—One to two FLUID drachms, in WATER, three or more times a day.

PEACOCK CHEMICAL CO., St. Louis.

CARL L. JENSEN'S
CRYSTAL PEPSIN TABLETS

FOR DYSPEPSIA OR INDIGESTION.



CARL L. JENSEN'S CRYSTAL PEPSIN has been known throughout the world for the last ten years among the medical profession only. But a medical preparation of such high value as this could not be kept exclusively within the power of the physicians without permitting the public to become familiar with CARL L. JENSEN'S CRYSTAL PEPSIN, which they have so often seen mentioned in prescriptions from their physicians, and from which preparations they have received such gratifying results. That the public have availed themselves of this knowledge is manifested from the fact that the demand at the drug stores of late for CARL L. JENSEN'S CRYSTAL PEPSIN has become so urgent that we have been repeatedly requested by the Druggists at large to put up the PEPSIN in a more convenient form for their customers who demand JENSEN'S CRYSTAL PEPSIN without bringing a prescription. This PEPSIN, to suit the prescription department, is put up in loose Crystals or Scales, and therefore not in a suitable manner to be handled by the public. It is therefore, for the convenience of the public, prepared in tablet form, of which one or two constitute a dose, and put up in small bottles of convenient form to be carried in the pocket, each bottle containing seventy-five tablets.

CARL L. JENSEN,
SOLE MANUFACTURER,
2039 Green Street, Philadelphia, and 161 West 23d Street, New York.
KEPT BY ALL DRUGGISTS.

RUBY ROYAL "SEC."



This wine, of a bright crimson or Ruby color, possesses exceptional merit in all the characteristics of dryness, mellowness of flavor, and delicacy of fragrance. It is the only red champagne in the market, and can be tried at the Hoffman House, Delmonico's and other first-class places.

Sold by the Leading Grocers.

Good Agents

To obtain Subscriptions for

AMERICAN * ANALYST

WANTED ON LIBERAL TERMS.

WE solicit an investigation of our system and methods, and will gladly send to any one very interesting matter on the OPIUM HABIT, DRUNKENNESS and their effects and cure. Physicians specially invited to examine, and if desirous of trying our remedies, liberal arrangements will be made with them. Prompt and frank attention to correspondence. The remedies are put up safely in stout boxes and sent masked. Full directions sent.

THE LESLIE E. KEELEY CO., Dwight, Illinois.

AGRICULTURA
EXPERIMENT STATION
UNIV. OF ILLINOIS.

AMERICAN ANALYST

FOR THE

FAMILY AND CONSUMER.

A SEMI-MONTHLY ADVOCATE OF PURE FOOD AND THE SUPPRESSION OF ADULTERATION.

Office, 19 Park Place.

[Entered at the Post Office at New York, as Second Class Matter.]

VOL. IV.—No. 9. NEW YORK, MAY 1, 1888. Whole No. 81

CONTENTS.

Adulterated Paints 185
American Analyst 189
Answers to Correspondents 182
Antiseptics 185
Beers, Foreign 181
Book Reviews 188
Brain, Male and Female 189
Cigarettes in Congress 181
Crockery Poison 185
Deceptive Senses 186
Disease from Books 180
Domestic Dietetics 188
Editorial 182
Dangerous Toilet Articles—Poison in Crockery—The Pure Food Parade—Criminal Identification—Electric Dials—Libel and Electricity.
Eggs and Their Value 186
Food Adulteration 181
Helen's Escape—Chap. II. 177
National Currency of the U. S 179
Porcelain Ware 187
Sleep, Chemically Considered 186
Sea Kale 181
Tobacco Using 187
Weather Bureau 180
Whiskey, Good and Bad 184
Wines, by Prof. Wyatt—(Continued) 182

HELEN'S ESCAPE.

IN FOUR CHAPTERS.

CHAPTER II.

From Paris besieged and terrorized, to quiet, pleasant Kensham was a change I duly appreciated. We led a very tranquil life—that is, my wife, my daughter Helen, and myself; for our neighborhood, although within easy distance of London, had not yet given a sign of expanding into a fashionable suburb; we knew everybody, and very little served to excite and amuse us.

Five years passed since my life in the Rue de Douai; and Helen, at that time a bread-and-butter miss of awkward appearance, had blossomed into a pretty girl of eighteen. We had many friends about; but we were most intimate, Helen especially, with a gentleman named Corner, an Australian of great wealth, who lived with an aunt in an old-fashioned house not far from ours. When I say that John Corner was a fine-looking, black-bearded man, who stood six feet high, was an excellent athlete and a more than average scholar, I describe a man after whom many a fair Surrey lass sighed in vain, and whom I regarded as a very good husband in prospect for my Helen. I don't know if any form of betrothal had passed between them, but they were constantly billing and cooing, and I was very satisfied with the arrangement, for although I did not deem wealth a *sine quâ non* for my future son-in-law, I was not a rich man, and I would not have parted with her to one who could not keep her as I should have wished. When I saw that in the ordinary course of events nothing was likely to prevent Helen from becoming Mrs. Corner, I determined that by no fault of mine should she prove to be unworthy of the man she married. So, as I abominated the system of sending girls to boarding-schools, I had her taught French and music and the usual curriculum at home by the best masters and mistresses obtainable.

They were a great trouble, these various professors, the French masters especially so. If I got one who promised well, just as he was getting into good swing, something—conscription or dying relations or *mal de pays*—would call him away. Willing and able men with provincial accents abounded; but, as I was a good French scholar myself, I determined that Helen should be Parisian or nothing. Finally, Monsieur Pontneuf arrived. I got him through the French Consulate in Finsbury Circus; and I was introduced to a military-looking man, broad in the shoulder, and thin in the flank, with small hands and feet, and a pleasing, although rather melancholy face of the intellectual Gallic type. He could speak but very little English; his references were exceptionally good; and, from a certain reserve and hauteur in his manner, I guessed at once that he was an Imperialist gentleman driven to poverty and exile by the irony of Fate. My wife and Helen were charmed with him, and he very soon became established in our little world on a footing of almost familiar friendship. But he never took advantage of the favorable impression he had made; and after being with us three months, he was as punctilious in the respect he paid my wife and daughter as on the day of his introduction.

There was a tone of sadness about his reserve which interested me, and I felt sure that he was a man with a history, although, of course, I never presumed to broach the topic. Considering his nationality, he had a singular aversion to gaiety and social amusement, and firmly declined my repeated invitations for him to join in such rollicking diversion as our neighborhood offered. He spent his leisure time in wandering about, cigar in mouth and hands folded behind his back, engaged in deep thought, and very soon obtained the nickname amongst the irreverent local youth of "Dismal Froggy."

It may be imagined that amongst ourselves we often talked about Monsieur Pontneuf, and tried to build up from our imaginations the history or the romance which had made him so solitary and pensive in his manner. At length Helen seemed to throw some light upon the matter, for she said at dinner one evening:

"Papa, what do you think I found out about Monsieur Pontneuf?"

Of course I could not divine what it was.

"Why," she replied, "that he has a sweetheart."

"Impossible! Monsieur Pontneuf is fifty, if he is a day, and what girl is there about here who would fall in love with a middle-aged Frenchman?"

"I'll tell you who," replied Helen—"Gabrielle, Miss Corner's French maid. I've seen them more than once together, and the servant from the Cedars brought Monsieur a note to-day."

The notion seemed to me rather ridiculous that our solemn professor should have won the affection of the laughing, dark-eyed Gabrielle, who was, moreover spoken of as the flame of John Corner's coachman; but the evidence of my own eyes soon proved that there was at any rate some foundation for Helen's assertion. Upon more than one occasion of an evening I met Monsieur Pontneuf and Gabrielle together, although, from an English point of view, their deportment did not convey the idea that they were sweethearting; indeed Gabrielle seemed to me to hold Monsieur Pontneuf somewhat in awe, for I overheard her address him as "Monsieur," and her manner was very deferential.

Now, it was an invariable habit of mine on a summer evening to take a stroll out of doors with my cigar or pipe, a habit I had contracted in Paris, where one never dreams of passing a close evening shut up in a warm house. A very favorite haunt of mine on these occasions was a path running along a feeble stream which we dignified by the title of "the river," leading to a sequestered summer-house apparently constructed for the express convenience of lovers, who, on Saturday or Sunday nights especially, patronized it largely. On other nights I generally had it to myself, and always stopped there for a few minutes to sentimentalize over the beauty of the moonlit scene spread before me. One night I became aware that it was occupied, from the sound of voices within, and as one of the voices was that of Monsieur Pontneuf, in spite of my abhorrence of eavesdropping, I paused and listened. He was speaking in French, and I managed to catch this scrap of conversation:

"Then I am to understand that, so far as you know, he was in Paris in the year 1871, and that when you entered his service he was living near Amiens?"

"Yes, sir," replied the voice of Gabrielle.

"Mind," said Monsieur Pontneuf, "don't let me catch you mistaking facts, or it will go very hard with you."

"I am telling you truly, so far as I know, as I am a good Catholic," replied the girl.

"He left Amiens hurriedly one night?" said Monsieur.

"Yes, sir. We were at supper in the kitchen when he came in, and told me to pack up as soon as I could, for we had to catch the English mail-train at ten o'clock."

"Did he seem flurried or confused?"

"Not particularly, sir. He was pale, and spoke rapidly—that was all."

"I suppose you never heard him allude to a Madame Arosa?"

"You mean the old lady who——"

"Yes, yes—of course I do."

"Never, sir,"

"Of course nobody knows that you are in the habit of meeting me? At any rate he does not."

"I don't think so, sir; I am very cautious."

There was a movement of feet in the summer-house, which warned me to get out of the way, so I slid behind

a clump of bushes, and presently the two appeared in the moonlight.

"Report to me all you see and hear," said Monsieur.

"I will, sir."

The Frenchman slipped something which chinked like coin into her hand, and they separated, he taking the path leading to the village, she going in the opposite direction toward the Cedars. From this conversation it was quite clear to me that whatever might be their relationship to one another, Monsieur Pontneuf and Gabrielle were not lovers; and, putting circumstances together, I made up my mind that my professor, like so many others in his calling, was a political refugee, either Napoleonist or Communist; and I knew very well that the French republican government, to whom both were equally hateful, was sparing no pains or expense to find out the whereabouts and to keep itself informed of the actions of all such offenders. Evidently he was making use of the girl Gabrielle as a spy and informer; or it might even be that he was engaged in a plot against the government. During my artist life in Paris and London I had been brought into constant contact with this class of gentry; and I knew that we should often shudder if we knew what sort of individuals make use of our free island as an asylum and live amongst as harmless bread-winners. However, Bonapartist or Communist, criminal or innocent, Monsieur Pontneuf performed his duty to me satisfactorily and thoroughly; and it was not for me to pry behind the scenes of his life. I found John Corner in the smoking-room when I arrived at home; but I said nothing to him about what I had overheard during my walk.

"Well," he said, "you know I don't want to meddle in your affairs; but I've been rather put out and puzzled lately about a matter concerning which perhaps you can enlighten me; I mean about this Monsieur Pontneuf, who gives Helen her French lessons. Do you know anything about him?"

"Nothing more than that he was accredited to me by the French Consulate in London, and that he showed me very high testimonials. But why do you ask?"

"Well," he replied, "because there is something going on between him and my aunt's maid, Gabrielle. She has never asked so frequently for leave to go out of an evening as she has since Monsieur Pontneuf came here."

"Perhaps there is a little affection between them. Even to Jack Corner, whom I loved as my own son, I did not feel justified in confiding what I had chanced to overhear in the summer-house."

"I don't think so," said Jack, shaking his head. "He's a middle-aged man, and she's a mere girl of eighteen. Besides, she has never spoken to my aunt about it, and servant-girls always like to confide these little matters to mistresses who take an interest in their welfare. No; I think he is what we don't suspect him to be—a plotter, perhaps, or a proscribed Communist leader."

"It doesn't much matter if he is, so long as he performs his duties."

"No. But I don't care about our maid being mixed up in this sort of business," said Jack; "for not only does it distract her attention from her duties, but it might involve us in unpleasantness."

"Well, I don't know how we can find out; and I must admit that I fail to see how we can suffer by whatever two French people choose to concoct together."

But it suddenly struck me that Jack must have seen me near the summer-house, for he was looking curiously at me, as much as to say: "I should like to ask you about it, but I don't like to." However, I was resolved not to say anything unless pressed, and changed the conversation. But I noticed that Jack seemed uncomfortable during the remainder of our talk, and I was puzzled to account for it. Our conversation at length turned on the trips abroad we were severally going to make during the next week—he to Switzerland, for a clamber amongst the High Alps; and I and my ladies to Paris, for the important purpose of choosing the trousseau for Helen's wedding, which was to be celebrated in the late Autumn.

But I saw that his mind was uneasy about Gabrielle and Monsieur Pontneuf; for, as we were bidding each other good-night at the door, he said:

"You keep an eye on Monsieur Pontneuf, or perhaps you will be astonished one of these fine days."

"What do you mean, Jack?"

"Why, that I believe him to be nothing less than one of these Socialist dynamitards, and that he is in the thick of a plot against our own government here at home."

(To be continued.)

DIAMONDS IN METEORIC STONES.—In a Russian paper appears a preliminary report of the examination by Latschinof and Jerofeif, professors of mineralogy and chemistry respectively, of a meteoric stone weighing four pounds, which fell in the district of Krasnoslobodsk, government of Penza, Russia, on September 4, 1886. In the insoluble residue small corpuscles showing traces of polarization were observed; they are harder than corundum, and have the density and other characters of the diamond. The corpuscles are said to amount to 1 per cent. of the meteoric stone. Carbon in its amorphous graphitic form has been long known as a constituent of meteoric irons and stones; lately small but well-defined crystals of graphitic carbon, having forms often presented by the diamond, were described as having been found in a meteoric iron from Western Australia. "If this supplementary discovery be confirmed," says *Nature*, "we may at last be placed on the track of the artificial production of precious stones."

ASK YOUR GROCER FOR IT. USE NO OTHER.

IMPEROYAL Wheat, Buckwheat and Cereals.



BEST IN THE MARKET.

IMPEROYAL VACUUM COOKED OATS, WHEAT AND HOMINY

AND

Griddle Cake Flour.

M. D. STEVENS' IMPEROYAL NEW PROCESS REFINED FLOURS.

Require but one minute in preparation, without **Salt, Baking Powder or Yeast.**

18 MERCANTILE EXCHANGE,

NEW YORK.

DIRECTIONS ON EACH PACKAGE.

Can be used for all kinds of Pastry, Bread, Biscuit, Griddle Cakes, etc., and its absolute freedom from Alum, Terra Alba, or any injurious ingredient, make it a necessity in every household. No lady can afford to be without it.

SOLD BY FIRST-CLASS GROCERS.

MELLIN'S

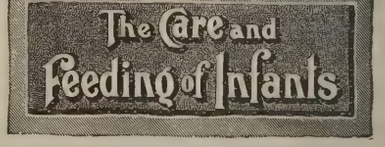
TRADE MARK.

FOR INFANTS & INVALIDS.

FOOD

The Only Perfect Substitute for Mother's Milk.

A Copy of our Book,



will be MAILED FREE to any address.

DOLIBER, GOODALE & CO.,

40-41-42-43 Central Wharf, Boston, Mass.

NESTLÉ'S FOOD



IS ESPECIALLY SUITABLE FOR INFANTS IN HOT WEATHER.

Requires No Milk in Its Preparation and is Very Effective in the Prevention of Cholera-Infantum.

"Ziemssen's Cyclopedia of the practice of Medicine," Vol. VII., the standard authority, says: **"In cases of Cholera-Infantum Nestle's Milk Food is alone to be recommended."** Because the gastro-intestinal disorders to which infants are so subject are provided for by presenting only the *nourishing* properties of cow's milk in a digestible form. "Cow's milk produces a coagulated mass of curd or cheese, which the immature gastric juice is **utterly unable to dispose of.**"

This is one of several reasons why infant foods requiring the **addition** of cow's milk fail as a diet in hot weather.

Pamphlet by Prof. Lebert and sample sent on application.

THOS. LEEMING & CO., Sole Agents, New York.

F. W. DEVOE & CO.,

ESTABLISHED 1852.

PURE MIXED PAINTS

WE desire to call attention of consumers to the fact that we guarantee our ready-mixed paints to be made only of pure linseed oil and the most permanent pigments. They are not "Chemical," "Rubber," "Patent," or "Fireproof." We use no secret or patent method in manufacturing them by which benzine and water are made to serve the purpose of pure linseed oil. Sample cards containing 50 desirable shades, sent on application.

Catalogues of our different departments to responsible parties.

FINE VARNISHES, WOOD FILLERS, WOOD STAINS.

Artist's Materials. Mathematical Instruments.

Cor. Fulton and William Sts., New York.

COFFIN, DEVOE & CO.,

179 RANDOLPH STREET, CHICAGO.

IMPORTANT

TO THE

MEDICAL PROFESSION.

Send your address to THE NEW YORK PHARMACEUTICAL COMPANY, BEDFORD SPRINGS, MASS., for Illustrative Hand-book, **FREE,** containing valuable formula, special directions, and the testimonials of one thousand physicians in favor of the great merits of

HAYDEN'S

Viburnum Compound,

IN FEMALE DISEASES.

Also, the

URIC SOLVENT,

For KIDNEY DISEASES, and complaints arising therefrom.

NATIONAL CURRENCY.

A USEFUL DESCRIPTION OF AMERICAN PAPER MONEY.

"Fewer persons would be victimized by 'shovers of the queer' if they would familiarize themselves with the general features of the different issues and denominations of our paper currency. I see frequently published statements that notes of small denominations have been 'raised' and successfully placed in circulation. Now, nobody of ordinary intelligence ought to be deceived by so transparent a swindle as that."

The foregoing observations which fell from the lips of a treasury employee recently arrested the attention of a *Tribune* correspondent, who asked:

"Can you give off-hand a correct description of each issue and denomination of paper currency in circulation?"

The treasury man confessed that he could not do it. Two or three days afterward he came back and said: "I have taken the trouble to look into that matter. It was a greater task than I expected. Here is a list of all the different kinds of currency, with thec hief characteristic of each issue and denomination. All of them have been counterfeited except the silver certificates, which have not been out long enough to give counterfeiters an opportunity to do their work and get the false notes into circulation. If every man who handles money would paste this list in his hat and test every doubtful note by it, a good many thousand dollars in the aggregate would be saved every year."

The list condensed is as follows:

The old $1 treasury note has on its face a likeness of George Washington.

The $1 silver certificate has on its face an engraving of Martha Washington.

The $1 National bank note has on its face an engraving of two maidens in the attitude of peace, each grasping the other's hand; on the back of the note is an engraving representing the landing of the pilgrims, and on the left will be found the coat of arms of the state in which the bank is situated. On the right is the representation of the American eagle surrounded by National emblems.

The $2 United States treasury note has on its face an engraving of Alexander Hamilton, with lathe work on the back.

The $2 National bank notes have on their face a picture of the Goddess of Liberty seated by a United States flag with the wreath on the top of its staff, and the figure 2 engraved in large proportions extending from the upper right hand corner of the bill to the centre.

The $2 silver certificates have an engraving of General Hancock on the left of their face and green lathe work on the back.

The $5 National bank notes (old issue) have on the left of their faces an engraving representing the discovery of America by Columbus, and on the right a scene in which appear Pocahontas and John Smith. On the back is an engraving representing the landing of Columbus. The issue have on the left of their face a picture of Garfield. On the back of the note, left side, is the coat of arms of the state in which the bank is situated, and on the right is the representation of the American eagle, surmounted by the letters "U. S." in monogram. The note is brown on the back.

The $5 silver certificates have on their face a vignette of General Grant, and on the back are scrolls representing five silver dollars.

The $5 United States treasury notes (old issue) have on the left of their face an engraving of the Goddess of Liberty, with Alexander Hamilton on the right and green lathe work on the back. The new issue have an engraving of Jackson on the left, a pioneer scene on the right and lathe work on the back.

The $10 Treasury notes (new issue) have an engraving of Daniel Webster on the left of their face, the scene of Pocahontas and Captain Smith on the right, and lathe work on the back. The old issue notes have a likeness of Abraham Lincoln on the left, an American eagle in the centre, and the Goddess of Liberty on the right.

The $10 National bank notes (old issue) have on the left of their face an engraving of Benjamin Franklin drawing the lightning from the clouds, and on the right a representation of the Goddess of Liberty borne by the American eagle. On the back of these notes is a representation of De Soto discovering the Mississippi river. The new issues have chocolate-colored backs, with the engraving of De Soto omitted.

The $10 silver certificates (old issue) have on their face a likeness of Robert Morris, the back of these notes being white and black. The new certificates have on the centre of their face a likeness of Vice-president Hendricks, and have green backs.

The $20 legal tender United States notes (old issue) have in the centre of their face a picture of the Goddess of Liberty, with sword and banner, and lathe work on back of notes. The notes of the new issue have on the left a picture of Alexander Hamilton, and on the right is the Goddess of Liberty, with shield and sword.

The $20 National bank notes have on the left of their face a representation of the battle of Lexington, and on the right is the Goddess of Liberty, surrounded by emblems of the different arts and trades of the country. The old issues of these notes have on the back a representation of the baptism of Pocahontas, the new issues having a chocolate-colored back, with this engraving omitted.

The Standard of Excellence.

KINGSFORD'S

OSWEGO

Pure and Silver Gloss



STARCH

KINGSFORD'S

OSWEGO CORN STARCH

FOR

Puddings, Custards, Blanc-Mange, Etc.

THE PERFECTION OF QUALITY.

WILL PLEASE YOU EVERY TIME.

Always ask your Grocer for these goods.

COLDEN'S

ORIGINAL LABEL:
"Colden's Liebig's Liquid Extract of Beef and Tonic Invigorator."

LIQUID

BEEF TONIC.

AN INVALUABLE AID IN THE TREATMENT OF ALL CASES OF DEBILITY.

Established 15 Years. Endorsed by Scores of Physicians. Essentially Different from all other Beef Tonics. Beware of Imitations.

COLDEN'S LIQUID BEEF TONIC consists of the Extract of Beef (by Baron Liebig's process), spirit rendered non-injurious to the most delicate stomach by extraction of Fusel Oil, soluble Citrate of Iron, Cinchona, Gentian and simple aromatics. An official analysis of this preparation by the eminent chemist ARTHUR HILL HASSALL, M. D., F. R. S., and an endorsement by SIR ERASMUS WILSON, F. R. S., is printed on the label of each bottle.

Its Range of Action Embraces all Cases of Debility.

By the urgent request of several eminent members of the medical profession, I have added to each wineglassful of this preparation two grains of SOLUBLE CITRATE OF IRON, and which is designated on the label as "No. 1," while the same preparation, without Iron, is designated on the label as "No 2."

It acts directly on the sentient gastric nerves, stimulating the follicles to secretion and gives to weakened individuals that first pre-requisite to an improvement, an appetite.

☞ *I will, upon application, send a sample bottle of* ***Colden's Liquid Beef Tonic*** *to any physician in regular standing. Please ask your Dispensing Druggist (if he has not already a supply) to order it. In prescribing this preparation physicians should be particular to mention* ***"COLDEN'S"*** *viz: "EXT. CARNIS. FL. COMP. (COLDEN). It is put up in pint bottles and can be had of Wholesale and Retail Druggists generally throughout the United States.*

C. N. CRITTENTON, Sole Agent,

115 Fulton Street, N. Y.

Please Mention the AMERICAN ANALYST.

The $20 gold certificates have on the left of their face a picture of Garfield, and in the centre the word "gold" in large colored letters, while on the back of the note is seen the American eagle, with thunderbolts in his talons.

The $20 silver certificates have on the right of their face a likeness of Commodore Decatur, and on the back of the notes the word "silver" in large letters, widely separated.

The $50 United States treasury notes (old issues) have an engraving of Hamilton in the centre of their face, and on the back many small engravings of the words "$50 United States treasury note," in lathe work. There is also another issue with Henry Clay on the right and the Goddess on the left. The new issues have on the left of their face a picture of Benjamin Franklin, and on the right the Goddess of Liberty, with the motto "E Pluribus Unum," the back of the notes being green.

The National bank notes have on their face a representation of Washington crossing the Delaware. The old issues have on their back an engraving representing the embarking of the Pilgrims, which is replaced in the new by a chocolate-colored back, without this engraving.

The $50 gold certificates have on their left a picture of Silas Wright, and on the right the number "50" in large figures. On the back the notes are colored a mild yellow, with an engraving of the American eagle and banners on the right.

The $50 silver certificates have on their face a picture of Edward Everett, with the word "silver" in large, widely separated letters on the back.

The $100 treasury notes (old issue) have on their left a representation of the American eagle with outspread wings, and on the back are the words, many times engraved, "United States Treasury note." The new issues have a picture of Lincoln on the left of their face, the head and shoulders of the Goddess of Liberty in the centre, and on the right the Goddess of Science in the attitude of instructing a child. The backs are green.

The $100 National bank notes (old issue) have on the left of their face an engraving of Perry's victory on Lake Erie, and the right a picture of the Goddess of Liberty by the "Fasces," or united bundle of pieces labeled "The Union." On the back is represented the signing of the Declaration of Independence. The new issues have the same engravings on the face, with chocolate-colored backs, without engraving.

The $1,000 National bank bills have on the centre of their face a representation of General Scott and his army entering the City of Mexico, and on the right a picture of the National Capitol at Washington. On the back of the bills, on the left side, is seen the coat of arms of the State in which the bank of issue is located. In the centre is a picture of Washington resigning his commission, while on the right is seen the American eagle with National emblems.

The $1,000 gold certificates have the word "gold" in large letters on their face, and a picture of Hamilton on the right. On the back is the picture of a large American Eagle with outspread wings holding in its beak the motto "E Pluribus Unum." In one of its talons is a bundle of arrows, and in the other is an olive branch.

DISEASE FROM BOOKS.

A LEGAL SOLEMNITY WITH DANGEROUS POSSIBILITIES.

In a recent issue of *The Medical Register* we find the following paragraph, which coincides with the views of the subject of book contamination already expressed by the AMERICAN ANALYST.

"Quite a little bustle has been made by the newspapers, because a certain physician, who was recently summoned to appear in a court in New Jersey, refused to kiss a very dirty looking Bible which was presented to his lips in the administration of the oath. The episode occasioned a stir in court, and the physician was obliged to set aside his feelings to comply with the legal requirements. It was not, however, without a protest which we fully indorse. The kissing of the Bible in any case is a form which might easily, without the sacrifice of solemnity or of the stricture of an oath, be set aside in favor of simple touching of the book with the hand or recognition of it in the averration. The lips are most sensitive receptacles for the germs of disease, and, from the motley throng of dirty and diseased persons who are summoned in a court of justice, what infectious germs may not be disseminated? The person who kisses a Bible in court has not the least surety that his lips do not come into direct contact with the pollution left by a predecessor who was suffering from some foul skin disease or taint, not to speak of the germs of eruptive fevers and the like. A very simple way of getting around the matter would be to have a bible bound in some waterproof material, which could and should be sedulously washed clean after every use. This is a precaution which is due to public health, and which could easily be instituted by every court. If the lawyers who insist so strenuously on these fine points of law had more bible kissing to do themselves, they might better realize the pertinence of what we say."

BURNETT'S
PERFECTLY PURE HIGHLY CONCENTRATED
Standard Flavoring
EXTRACTS

THE superiority of these Extracts consists in their
PERFECT PURITY AND GREAT STRENGTH.

There is no subject which should more engross attention than the purity of the preparations which are used in flavoring the various compounds prepared for the human stomach.

They are not only true to their names, but are prepared from fruits of the best quality, and so highly concentrated that a small quantity only need be used.

JOSEPH BURNETT & CO., Boston, Mass.

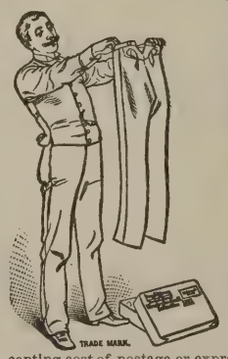
THE WEATHER BUREAU.

PECULIAR CIPHER USED IN TELEGRAPHING ITS REPORTS.

"Rattletraps, pigs' tails, and porcupines" was the telegraph river report received by the signal office one morning. Obviously, that means that the Monongahela was rising, that there had been nearly a seven-foot gain during the day, that the rainfall was 0.58 inches, and that the wind was from the northwest. "Coal scuttles, flour bins, and fire balloons," was the message from Morgantown. Naturally, that meant a rising river, 5 feet 6 inches of a change, 0.35 inches of rainfall, and a northerly wind. The signal service does all its reporting in cipher. All river messages are received in the above kind of language. It is a laughable thing to have to call at the office at an early hour on business and hear the jargon that is being called out from the telegrams. The oddest words in the language seem to have been selected to form the cipher. The use of a cipher at all is characteristic of the difference in the management of a government department and a private concern It is difficult for an ordinary mind to see any need for it. The only conceivable theory it can be justified on is that the department was at one time a branch of the military service, and that therefore the fiction should be kept up that some mysterious enemy was in the country whom it was needful to delude. Many people will be apt to think that, with all due respect to the department, it could not delude an enemy worse than by furnishing him with some of the predictions that are daily furnished to the innocent public.

NOTHING LIKE A GOOD START.—"Hello, conductor! What are all those derricks and hoisting tackles at this station for?" "Oh, this is the home of an eminent Chicago electrician. He has invented a flying machine, and they are trying to hoist it up for a trial trip today."

THE FAMOUS CUSTOM MADE
PLYMOUTH ROCK $3 PANTS
Full Suits and Overcoats
at proportionate prices.



Owing to the enormous number of mail orders received from New York City alone we have opened there a branch salesroom at **285 BROADWAY**, opp. **Stewart Building**, where our New York customers may call and be measured without the

DO YOU WEAR PANTS

trouble of writing us. But, if our goods are so desirable in **New York** surely they **must** be bargains to the customer in the country, where clothing is higher. These goods are within the reach of every one in the United States, all **at the same price**, excepting cost of postage or express. Upon receipt of 6 cents we mail 20 samples of cloth to select from, self-measurment blanks and a 48-inch linen tape measure. If you cannot wait for samples, tell us about what color you prefer, send us your waist, inside-leg and hip measures, together with $3.00, and 35 cents to prepay express or postage, and we will guarantee safe delivery and perfect satisfaction. **For any cause**, we refund money upon request, or make another garment if customer desires **The American Express Co.** (capital $20 000 000) will promptly reply to any inquiry sent their Boston office. Address all **mail** to us at Boston office.

PLYMOUTH ROCK PANTS CO.,
18 Summer Street, Boston, Mass.

"ROYAL POLISH"



The Most Reliable Dressing
FOR
Ladies' and Children's Shoes.

It is the BLACKEST.
It COATS the Leather the LEAST.
Does NOT INJURE the Finest Kid.

There is nothing AT ANY PRICE equal in quality, or so convenient and CLEANLY TO USE.

SOLD EVERYWHERE.

Ask Dealers —for— "BIXBY'S ROYAL POLISH."



"BIXBY'S BEST"
For GENTS' BOOTS.

Shines Quickly!
Saves Labor and
Leather!!

—TRY—
"Size 5" OR
"Size B"
WITH
Pat. Sliding Handle



THE MOST PERFFECT EVER INVENTED.
Working under the box, ready for use when wanted.



FOOD ADULTERATION.

THE KIND OF LEGISLATION THAT THE SUBJECT DEMANDS.

There is growing danger that the outcome of the investigation by the congressional committee into the methods of lard manufacture and other food products will lead to sweeping and impracticable legislation upon the subject of food adulteration—so-called. Public sentiment is being worked up by the nauseous revelations—some of which are, unfortunately, only too well founded. But an inflamed public sentiment is not the proper temper for legislation, although enactments framed under such inspiration are pretty apt to become "dead letters" very soon. This, however, is an unsatisfactory remedy for bad law. The very existence of an unenforced law on the statute books is a hinderance to further and needed legislation on the given subject. What is needed in the present instance is certainly not a wholesale prohibition of all "adulteration," as this term is generally understood. The public health and welfare will be sufficiently protected if the law requires that every article of food or drink for human consumption shall be sold for what it really is. Such a law would commend itself to the general sense of honesty and fair play and this would secure its enforcement. The so-called "adulteration" of food articles by no means implies their deterioration in all cases; and since many people prefer chicory in coffee, burned crackers in pepper, and similar sophistications, and others cannot afford to buy strictly pure goods but are content with oleomargarine, etc., no law could be enforced to prevent such "adulterations." All that the public needs is that it be told honestly and plainly just what it is getting when it buys food and drink. Anything further than this is meddlesome and mischievous.—*Chicago News.*

SEA-KALE.

WHERE IT IS FOUND AND HOW IT IS USED.

This favorite vegetable derives its name from having been originally found growing wild upon the sea-coast, where its tender shoots, blanched by the drifting of the sand, were occasionally eaten by the families of the poor fishermen. It was not seen in a London market until about a century since. In Exeter, at one time, the roots fetched as much as 2s 6d. each, but when tried at Covent Garden, the labels attached to them having been accidentally defaced or lost, kale was carefully set aside as a suspicious-looking and, probably, poisonous root, in case it should be eaten by some guileless purchaser. Sir William Jones, who lived at Chelsea some time in the middle of last century, highly appreciated the excellencies of this delicious and delicately flavored esculent, and endeavored to reintroduce it to the markets, with a moderate amount of success. It was always in favor amongst the Scottish people, and may now be found in most Continental markets, more especially in France. An old French author vilified sea-kale as the "Chou marin sauvage d'Angleterre"; having possibly tasted a bitter specimen of kale, he opined it fit only for uncouth and uncivilized palates; but when blanched and well served, it equals, if it does not surpass, asparagus in delicacy of flavor. The young shoots and unopened leaves are the best parts of sea-kale, but the larger leaves may be scraped and served like asparagus, and will also be found useful for soups. Forced kale is most delicate in mid-winter, when other kinds of fresh vegetables are difficult to obtain. It should not be exposed to the action of light, as that renders it strong and bitter; therefore, after cutting, keep the heads in the dark, or carefully covered; dress when young, crisp and tender; if allowed to become stale and discolored it is comparatively worthless. Sea-kale is remarkably easy of assimilation, and as it abounds in alkaline properties, it will be found one of the most nutritious, as well as the lightest, esculents which can be taken by the sedentary, or by any who suffer from dyspeptic tendencies. Sea-kale is generally eaten plainly boiled and served on buttered toast with melted butter poured over. An excellent sauce for sea-kale may be made by rubbing from two ounces to a quarter of a pound of butter in flour; when the butter is sufficiently oiled, stir in the yolks of two eggs, or one, if for a small quantity of sauce; flavor with a squeeze of lemon juice, serve with the sea-kale, but do not pour over. Cold sea-kale may be cut up into pieces, dipped in batter, and highly fried. This friture forms a palatable side dish.—*British Journal of Catering.*

THE CIGARETTE IN CONGRESS.

DISCUSSION OF THE USE OF CIGARETTES BY BOYS.

A Washington despatch of April 23, says: The friends and enemies of cigarettes and cigarette smokers had an interesting test of strength in the Senate to-day, and the cigarettes were defeated. Strangely enough, the vote was divided almost strictly on party lines, the Republicans ranging themselves solidly in opposition to the paper cigar and the Democrats, with the exception of Senators Brown and Harris, putting themselves on record in its favor. Some of the Senators who paid little or no attention to what question they were voting upon, which is not at all unusual with them, did not know that there was a trial of strength between the cigarette and its enemies, but such was the fact. Senator Chace opened the warfare by presenting a petition signed by 267 physicians, including the most prominent ones in the city, urging the passage of the bill making it unlawful for anyone to supply cigarettes or tobacco in any form to boys under 16 years of age. Mr. Chace took occasion to dwell with great emphasis upon the terrible results of the habit of cigarette smoking, which, according to the testimony of doctors everywhere, is rapidly sucking the life blood out of the growing youth of this country. Senator Chace said the question was as important as any now before Congress, and that the people might read for themselves what eminent physicians say of the deadly work being done by the cigarette, he moved that the petition be printed in the *Record*. Senator Stewart, who is fast becoming one of the most frequent talkers in the Senate, not excepting the senior Senator from Florida, emphatically endorsed all that Senator Chace had said, and added his testimony to that of the physicians. Senator Harris loudly objected to the printing of the matter in the *Record*. Senator Chace then begged to have it printed as a public document, that the parents of growing boys might see the evils of the habit of cigarette smoking. Mr. Harris objected to this also, and when the Chair said he thought Mr. Chace's motion was carried, the Tennessee Senator called for a division. Every Republican voted with Chace against the cigarette, and every Democrat, except Brown, with Harris in its favor. The opponents of the cigarette won, and the warning of the physicians will be printed for public distribution by the Senators.

FOREIGN BEERS.

ANALYSES OF EUROPEAN LAGER BEER, PORTER AND ALE.

The following is the comparative analysis of the most prominent European brewings made for home consumption:

	Alcohol, Per cent.	Extract, Per cent.	Ash, Per ct.
Strasbourg,* G. Frick	4.79	5.62	0.30
Mulhouse,† J. Dauner	4.27	8.07	0.19
Lille	4.2	5.3	0.35
Culmbach	5.28	8.40	0.32
Munich	3.80	5.80	0.29
Augsburg	4.11	5.66	0.23
Munich Salvator	4.35	9.78	0.7
" Royal Brewery	4.41	4.55	0.24
" Spaten	5.23	8.50	0.18
" Zachert	4.5	9.6	0.35
" Loewen	4.49	9.63	0.30
Ketzingen	4.72	8.69	0.28
Stuttgart	4.	6.	0.19
Wurzburg	4.2	4.4	0.206
Kitzingen, Ehemann	4.88	5.74	0.23
Nurenberg	4.60	6.63	0.25
Frankfurt, Henninger	4.57	5.60	0.29
Bamberg	2.83	6.34	0.26
Libotschau	3.27	3.71	0.18
Dresden, Waldschlosschen	3.31	3.28	0.16
" Feldschlosschen	2.94	3.61	0.15
" Royal Brewery	4.49	8.08	0.21
" Plauen	4.34	7.28	0.21
Cobourg	3.9	6.57	0.46
Berlin (weiss)	2.60	5.45	0.13
Jena	3.01	6.14	0.459
Hamburg	3.98	6.76	0.25
Braunschweig (sweet)	1.36	14.	0.18
Berlin,‡ Kiler	6.6	5.96	0.27
Saarbruck	4.81	5.07	0.27
Pilsen	3.39	4.78	0.17
Prague, Prelats	4.32	5.95	0.17
Leimeritz	3.35	5.13	0.18
Budweis	3.55	4.40	0.20
Vienna	4.05	7.8	0.19
" Dreher	4.1	7.20	0.23
Brussels	5.80	3.68	
PORTERS.			
London, Barclay Perkins & Co.	5.5	5.9	
Dublin	4.7	6.	0.37
Brown Stout	5.	7.	
Extra Stout	9.	0.5	
Double Brown Stout	6.33	7.36	0.288
ALES.			
Burton	6.2	7.	
Scotch	5.8	10.5	0.32
Pale	5.57	4.62	
India Pale	5.41	5.90	
Export	7.3	5.9	0.35
Edinburgh	8.5	10.9	
Common London	5.	6.7	

* 2.400 dextrine.
† 3.708 dextrine.
‡ Salicylated.

IS SALICYLIC ACID A SLOW POISON.—Salicylic acid infrequently repeated small doses has been pronounced by commissions of medical men injurious to the health, although the experimental ground for such a verdict has not been made public. To test the matter Kolbe took fifteen grains daily in his drink for nine months without suffering any inconvenience. Dr. Lehman gave to two laborers in Munich during three months about half this daily dose, without inducing any apparent derangement of the system. It seems probable from these experiments that the prejudice against salicylic acid as a preservative agent in articles of food and drink is not well founded. At the same time we have in benzoic acid an agent equally efficient, against which no such prejudice exists.—*Pharmaceutical Era.*

QUICK ANCHORAGE.—A "cable anchor" for stopping boats has been successfully tried in the Seine. The apparatus consists of a cable having on it a series of canvas woves, which open by the action of the water, and close when drawn the usual way. A steamer running thirteen knots was stopped in thirteen seconds, and in a space of from twenty to thirty feet by this arrangement.

American Analyst,

Published on the 1st and 15th of each month.

Subscription, - - - - - $1 per year.
Single Copies, - - - - - - 5 cents.
Subscriptions to foreign countries, - $1.50.

Remit by Express Money Order, Draft, P. O. Order, or Registered Letter.

Advertising rates on application.

EUROPEAN AGENCIES.

On file at "American Exchange," 449 Strand, London; and American Exchange," 35 Boulevard Des Capucines, Paris.

THE ANALYST PUBLISHING CO.,
Publishers.

H. LASSING, M. D., } *Editors.*
T. P. McELRATH, }

No. 19 Park Place, ... New York.

NEW YORK, MAY 1, 1888.

ANSWERS TO CORRESPONDENTS.

HOUSEWIFE.—*In an advertisement I read that the Royal Baking Powder Co. is the only baking powder manufacturer that uses chemically pure cream of tartar. Is this true?* It is positively false. All cream of tartar manufacturers are in one pool compelled to turn out one standard grade of cream of tartar. And as this is as accessible to one mauufacturer as to another, you have only another confirmation of what we have charged all along, that these advertisements are utterly unreliable and misleading.

MEDICUS.—*What is the principal value of a well made malt extract?* The amount of diastase it contains.

DANGEROUS TOILET ARTICLES.

Nearly all toilet articles for external use contain violent poisons, and it would seem as though the manufacturers of such preparations ought to be held to as strict accountability as the pharmacist, who is compelled to submit to an examination relative to his qualifications before he can obtain a license to practice his profession. Americans are apt to think that if they can obtain genuine French preparations, they will be assured of purity and safety. A late report of the French government laboratory shows how mistaken this idea is, inasmuch as it was found that nearly all the more popular French toilet preparations contain large quantities of nitrate of silver, sulphate of copper, acetate of lead, bichloride of mercury and other such dangerous substances. In remedies for baldness, cantharides and croton oil were found. Sulphur, arsenic and lead form the basis of most of the face powders and depilatories; carbonate of lead, subnitrate of bismuth, oxide of zinc, are largely used in toilet masks. Out of forty-one packages of different toilet articles analyzed, twenty-eight or about seventy-one per cent. were found to contain poisonous substances. Of the better known Parisian toilet articles the following examples will serve.

Name.	Contains in 1000 parts.
Eau Lemoine.....11 55	Lead.
Lait antephélique Candès.... 5.2	Bichloride mercury.
Eau de Roche.....38.36	Nitrate of silver.
Eau de Castille.....16.67	Acetate of lead.
Eau des fées..... 2.13	Lead oxide.
Eau Charbonnier.....19.36	Nitrate of silver.
Eau de Ninon.....48.9	Calomel.
Eau Magique..... 9.78	Lead oxide.
Eau de Lys.....53.	Chloride of mercury.
Teinture Rafin (For the beard).49.8	Silver nitrate.
Eau Royal-Windsor.....16.77	Lead oxide.

A *Poudre de Laforest* (depilatory) contained

Mercury.....	60 grammes.
Sulphate of Arsenic.....	30 "
Litharge.....	30 "
Starch.....	30 "

All the so-called rice powders (*poudres de riz*) contained one or more of the following: talc, alabaster, zinc oxide, carbonate of lead, or bismuth. The washes for the hair which are so sedulously commended as prepared from exotic plants, were found to consist of solutions of ammonia and nitrate of silver, the use of which is sure to be followed by inflammation of the eyes; others were made of litharge, one of the lead salts. The celebrated *Eau des fées* of Sarah Felix, is a solution of sulphate of lead in hyposulphite of soda. A "Florida Water," loudly advertised as the distillation of exotic flowers, was found to consist of acetate of lead dissolved in rosewater. For so-called bear's grease, macassar oil and lion's fat pomade, a pomade of cantharides or croton oil is sold. A celebrated face wash, *le lait antephelique* is composed of corrosive sublimate 1.07, oxide lead 4, with some camphor, sulphuric acid and water. A new and very fashionable preparation called *Extrait de Camèlia* contains bichloride of mercury. Nearly all the powders used by ladies on face, shoulders and arms, contain from 3 to 9 parts of white lead in every 10 parts, the only thing in them that will resist heat and perspiration being the white lead. The French authorities are about to interdict the use of cyanide of potash, mercury, copper, silver, lead and cantharides in cosmetics and toilet articles, but this does not prevent their employment in goods made for the American market. Aside from these imported poisons, we have a good share of American manufacturers who make equally if not even more dangerous preparations. They will receive our early attention.

POISON IN CROCKERY.

The exposures in these columns of the possible danger arising from the acid glazes in the china ware from which we eat and drink have excited widespread attention. The position of the AMERICAN ANALYST on the subject has not been thus far controverted, nor, in fact, has any view in opposition to it been seriously set forth. The fact is, we were correct. The *Crockery and Glass Journal*, whose interest it is to maintain the absolute innocuousness of earthenware under all circumstances, attempted in its issue of April 1st to reply to our critical discussion of the subject in an editorial article which we reproduce in another column. The reply, however, is, as our readers will perceive, tame and absolutely unresponsive. It wholly fails to meet the issue. We have more to say on the subject, but the manifest inability of the champion of the other side to maintain a reasonably antagonistic ground has disarmed us. We do not care to press an attack on a fallen foe, especially when, as in the present instance, the "craze," which our opponent is so anxious to underrate, has so manifestly communicated itself to his mental organization.

THE PURE FOOD PARADE.

We notice that some of our exchanges in the grocery line publish regularly under the heading "In Favor of Pure Food," a list of persons who have sent in their cash subscriptions to the National Pure Food Association. The tariff on manufacturers and wholesale dealers is $10 per year, and on smaller fry $1 per year. What purpose the money is to be applied to is not stated, though it would seem to be an empty privilege to pay from one to ten dollars a year simply for the privilege of being recorded as in favor of honest dealing. Possibly the grocers who are running the concern have some project in their mind which will some day call for the use of the money thus collected, but as less than $150 have been contributed down to this date, it is evident that the grocery trade of the country is not sustaining the "movement" with any great degree of earnestness. We presume that the majority of them feel secure in the consciousness that even though their names are not paraded weekly as being "in favor of pure food," it by no means follows that those whose names are omitted are conniving at adulteration.

CRIMINAL IDENTIFICATION.

The Anthropometrical method of identifying criminals, originating from Paris, has been adopted in the prison at Joliet, Ill. In addition to the photograph of the prisoner, accurate measurements of his height, the length and width of his head, the length of the left and middle finger, of the foot, the fore-arm, the ear, the stretch of the arms, description of scars, color of the eyes, and so on, are recorded; and it is thus possible to identify prisoners assuming false names with far greater ease than was before possible. It is asserted that, in the two years that the system has been in operation in Paris, 826 habitual criminals arrested under assumed names have been identified. Besides the practical utility of the system, it amasses very valuable statistical data contributing toward the natural history of the criminal classes.

ELECTRIC DIALS.

A French inventor has applied the miniature electric incandescent lamp to watch dials, the current being supplied by a small pocket battery. The dial is of ground glass, and the lamp behind it lights it up, the effect being enhanced by a flat reflector. A key is included in the circuit to close the current when the light is required. It is obvious that there are circumstances in which such a device will be useful, and where it is inexpedient to strike a light to see the time—such places as mines, or in military operations. The apparatus is equally applicable to clocks.

LIBEL AND ELECTRICITY.

A recent decision in Germany is worthy of record for the benefit of American telephone patrons. One unfortunate telephone user lost his temper at being kept waiting by the central office, and when explanations were made he told the telephone official per telephone to "shut his gab and not lie about it." The Court gave the merchant sixty marks fine and twelve days in jail as a warning against a libellous use of a scientific convenience.

WINES.

THEIR CHARACTERISTICS AND THEIR ADULTERATIONS.

BY FRANCIS WYATT, PH.D.

(*Continued from page* 52.)

What really constitutes good quality and imparts high value to a wine? This is indeed a knotty question; one which, in fact, the present state of our scientific knowledge does not enable us to answer. Hence those confusing differences of public opinion and preference born of prejudice or half educated taste. Are we justified in regarding as types of perfection those wines which contain the highest percentage of alcohol; or those possessing the largest proportion of sugar, or those with a minimum of acidity; or are we to consider as a surer guide the total amount of extractive or solid matter, obtained by evaporating the liquid to dryness in a vacuum, at a low temperature? In our own emphatic opinion it would be ridiculous to characterize either of these qualities as conclusive criterions. Nay, we may even go farther and say the same of a wine that embodies them all—for, in our experience, we have met with hundreds

of such, which yet were very poor and unpalatable vintages. Under these circumstances, the only course open to analytical chemistry was the adoption of standards, and it has been the aim of our best investigators, for many years, to accurately fix upon the constituents of the best known and appreciated wines, from samples of known origin and undoubted purity, so that by comparison with them we might pass judgment upon all the rest. However rational this method of proceeding may appear, and doubtless is, it has yet nevertheless met with very harsh criticism and active opposition. Its adversaries have argued that, since these very peculiarities which most endear a wine to our senses of smell and taste, admittedly depend so essentially upon the soil and other surroundings in which each plant is grown, to fix any definite standard of composition must be both arbitrary and inconsistent. They point out that certain vines flourishing, for instance, in Burgundy, may produce a wine of an invariable nature in the place of their nativity, and yet, may, if transported to and planted in California, Virginia or New Jersey, yield, though treated in exactly the same way in every detail, a wine varying in every particular from that produced in France. These are serious objections; and yet, while we cannot exactly deny their truth, we deem it very unwise to exaggerate their importance. What analytical chemistry is intended to oppose and to guard against, is not the product of nature, be it poor or rich in any desired particular, but the artful devices by which dishonest men seek to imitate or to improve upon that product. Hence, our lack of knowledge of what constitutes the element spoken of as the *bouquet* or flavor of wines, is immaterial to the issue. We have made sufficient progress not only to know with absolute certainty the nature of all the tangible, perceptible or visible substances which a natural wine from the grape, of whatever origin, should unfailingly contain; but the approximate relation in which these substances stand to each other. Thus when we discover an undue proportion of any given constituent or the presence of any substance which has not been found in the same form of combination in any known quality of natural wine, we are immediately able to certify to adulteration and to identify the adulterant. With the exception of certain perfumes or odors, there is hardly a single body which could be added to a wine in order to improve it or impart to it some desirable qualities which it is known not to naturally possess, that would now escape our detection, whether it has been added either before or after the fermentation.

In evidence of what we have learned, we referred in our last chapter to the large number of compounds contained in the grape, and to the constancy of their existence in every variety, wild or cultivated, in proportions varying with the degree of maturity attained by the fruit. It will be *apropos* at this juncture to give closer attention to grape juice, in order to more firmly establish and strengthen our propositions. To commence with the sugar, there can be no doubt that this is the factor chiefly responsible for nearly all the phenomena which accompany the transformation of the juice into wine; and yet, so singularly uncertain and varied are its proportions, that while some varieties contain as much as 40 per cent. of their entire weight of glucose, others yield as little as one-fourth of that amount. Next in importance to the sugar we must rank the nitrogenous or albuminous bodies, since the action induced by their initiatory change under the influence of certain germs in the air, first excites the glucose to vinous fermentation. Then come certain kinds of gum, some pectic and mucilaginous principles, some dextrine and some minute quantities of fat or oil. After these come malic, citric and tartaric acids, more or less saturated by potash and lime, and combined with minute proportions of sodium and ammonia; and finally, come variable percentages of the phosphates of iron, alumina and magnesia, traces of silica, chlorine, carbonic acid gas and oxygen; water, in the ratio of from 60 to 80 per cent., holding the whole in solution or suspension. The volume of the *ensemble* of all these bodies in a must that is to be submitted to fermentation, is gauged with great accuracy from its specific gravity, as compared with that of an equal volume of pure water. Taking as a basis for calculation that the heavier the liquid the greater the amount of sugar, it has resulted from the most careful observation, that when the must is measured by Beaume's areometer at a temperature of about 60 deg. Fahr., each degree indicated by that instrument will correspond to the production of 1 per cent. of alcohol by the fermentation process. Thus, for example, supposing the juice to possess a strength of 10 deg. Beaume, the wine, if allowed to complete its fermentation, will contain 10 per cent. by volume, of absolute alcohol.

The most propitious time for cutting the grape crop is determined by the nature of the wine to be produced. It may, however, be roughly stated as generally chosen in fine and very dry weather, at either the end of September or the commencement of October. For red wine it is customary to gather the fruit before the attainment of that point of maturity when the last trace of acidity disappears; whereas, for white wine, complete maturity and absence of all acid principles is an essential factor to success. In most parts of France the harvested crop is thrown into the fermenting vessels without the removal of either the stalks, the seeds, or the husks. This is a circumstance which exerts a variable and yet all important influence on the qualities of the wines. The stalks yield to the liquid a large proportion of tannic acid, or tannin, and a peculiar kind of bitter principle; the seeds impart tannin and small quantities of fixed oil; the husks give a tannin of a special kind, together with large quantities of red, blue, and yellow coloring matters, and cream of tartar. These coloring matters, however, remain insoluble until a sufficiency of alcohol to dissolve them has been developed by the fermentation, and we may therefere produce either white or deep red wines, or any shade between the two, by either totally abstracting the husks from, or leaving them in contact with the liquid during the course of this process. From a series of very interesting analyses of numerous specimens of these grape skins, Berthellot has shown that they contain nearly two-thirds of the total acid principle of the entire grape, and some late experiments of our own have more than confirmed his theory. Some California grapes were submitted to us, from which we expressed five gallons of juice. In the juice itself we discovered forty grammes of crude tartar. Whereas, in the mass of skins which had been submitted to very heavy pressure, we found no less than 160 grammes. This fact is of very great importance, and deserves thoughtful attention, inasmuch as it proves that in addition to their influence in the matter of color, the elimination or otherwise of the skins from the must, necessarily modifies the composition of the wine. If they are withdrawn immediately after the juice has been pressed from the fruit, the fermented liquor will be of a lighter shade, and, containing less tartaric acid, will have a lesser tendency to deposit or acidify. The practice of making red wines from completely mature fruit has been definitely abandoned by the most intelligent producers, because our enquiries into causes and effect have enabled us to demonstrate that such wines are invariably too sweet; that they lack flavor and bouquet, contain little tannin, maintain a slight turbidity, and have no keeping qualities. A mere glance at such wines as Tokay, Muscatelle, Port, Frontignan, or the products of any extremely warm climate—Sicily, Spain, Portugal—will exemplify this fact. The inhabitants of such countries are naturally of an indolent disposition, and, unimpelled to exertion by any of those necessities so essential to the natives of colder regions, find their chief enjoyment in the *dolce far niente*. They have never been in any hurry to gather in their crops, and have not only allowed their grapes to mature, but even, in some cases, to partially dry up before cutting them from the branches. The result has been the production of wines, which it would be almost more rational to call liqueurs, which are only drank in very small quantities at dessert, which can not be regarded as wholesome, and which only find favor or appreciation among women and children. To the *connoisseur* they have of course, no value, and with the progress of education and taste, they will be more and more displaced by those vintages of the Bordeaux and Burgundy type, which, made from unripe fruit, are cherished by all true lovers of wine for their exquisite flavor and delightful fragrance.

To avoid a discussion of the various modes adopted for cutting, gathering and housing the crops, which though interesting to ourselves, might prove tedious to our readers and therefore out of place in these essays, we shall assume that everything in this regard has been well accomplished, and that the crop has arrived without accident at the sheds or warehouse. Having been cast into the fermenting tuns or tanks, its subsequent treatmeant will depend upon whether we wish to produce white or red, sweet or dry wines. Let us endeavor to somewhat familiarize ourselves with these different modes of treatment. In many red wine countries it is usual to detach the berries from the stalks before attempting to express their juice; in other districts this detail is neglected. In all cases, however, the husks remain in contact with the liquid; the time of their sojourn being determined or regulated by the shade of color required. For very dark red wines, they are maintained beneath the surface of the fermenting liquid by a network frame or cover, placed within the tun some inches from the top. This is probably the best system we have seen; it is certainly superior to that prevalent in Burgundy, of repeatedly breaking up the scum in order to re-submerge the skins that have been brought to the surface with other extraneous matters by the escaping carbonic acid gas. Burgundians argue that they produce a deeper and much finer coloration, but we are personally convinced that even if this be the fact (which we do not admit), they also induce a tendency to rapid acidity from the causes we have referred to, and hence all other advantages are more than counterbalanced. The preliminary mode of treatment in white wine regions is essentially different from all this in every particular. Nor does this depend upon the color of the grapes themselves, since many of the deep red species (such, for example, as the *Bourgignon* of France) serve as the basis of the best champagnes in the markets. To produce white wines, the husks, stalks and seeds must be entirely removed from the juice, and in order to effect this, the grapes, instead of being tramped with the feet or otherwise treated *en masse*, are always submitted to pressure in a wine press. Although the ordinary fermenting vessels or tuns are commonly made of oak, it is not unusual to meet with large brick-work tanks built especially for the purpose and lined with Portland cement. This latter, however, is a modern introduction of very doubtful value, and is, in our opinion, to be deprecated, not because there is immediate danger of the cement becoming soluble in the wine, but because we have found that, in practice, it offers obstacles to the separation and deposition of the tartar. The tun or tank must, of course, be left open at the top to allow a free passage to the escaping carbonic acid gas, and should never be of too large or unmanageable a size. In our own experience, we have met with the best results from the use of tuns which did not require more than one day to fill. With nothing larger than this have we ever been able to ensure simultaneity of action throughout the mass, either at the commencement or at the end of the fermentation. In grapes that have been harvested during extremely warm weather, this fermentation commences immediately after they have been cut, and, with proper subsequent regulation of the temperature, should be in full activity at the end of 24 hours. This regulation of the temperature, therefore, becomes a very important item, and it has in fact been proved by long observation and experience, that it is proper to commence at 55 deg. Fahr. as a minimum, both for the must and for the surrounding atmosphere, and that the liquid itself should never be allowed to exceed a maximum of 90 deg. Fahr. Beyond this point the glucoses are

decomposed into other substances than alcohol, and the latter body itself becomes volatilized and passes away in the form of vapor, with the carbonic acid. The arrangements as to temperature, adopted by most large wine growers in France, are very simple. They provoke a free draught through their sheds or cellars, and constantly sprinkle the tuns or tanks with cold water when the atmosphere is very warm, or surround them with either plaited straw or woolen blankets when it is somewhat cold.

The duration of the primary, or, as it is very aptly called, tumultuous fermentation, varies with the temperature at which it is allowed to proceed, and with the amount of sugar to be transformed, from four to twelve days. These, at least, are the average limits, which, speaking in a general way, have given us the best results; and, although in some special cases we have followed the advocates of a much longer period, we have never derived any additional advantage, but, on the contrary, have invariably either seriously impaired or altogether spoiled the quality of our wine. The exact time at which the fermentation ceases is very easily determined; it is evidenced by many commonplace signs, and is recognized without the aid of any scientific knowledge. There is therefore no legitimate excuse for any gross mistakes, even when they are made by the most ignorant of the peasantry. All those who have ever made wine on a large scale, have observed that when fermentation sets in, the escape of carbonic acid gas, caused by the decomposition of the sugar, is so abundant, as to make the whole liquor bubble up as if it were boiling. In proportion as the sugar is destroyed the evolution of the gas decreases, until finally it is altogether suppressed; while at the same time the large mass of frothy scum which it has borne up with it, being no longer sustained, collapses and falls flat upon the surface. Accompanying this infallible indication is the no less certain testimony of change in temperature, which, when the chemical action has come to an end, falls to the level of the surrounding air. Should neither of these proofs be deemed sufficient, the test of specific gravity will settle all doubts, for with the acquisition of alcohol and the loss of sugar, the weight of the liquid will have been so diminished as to show no more, and perhaps even less, than 0° when tested with Beaume's areometer. These remarks are necessarily brief; they may perhaps be superfluous, but we have been induced to make them to show that the natural fermentation of grape juice is a very simple process, devoid of all technicality, and that the manufacture of excellent dry table wine can be carried on here, as it has long been carried on in France and Germany, by the humblest cultivators of the soil. For the production of sweet and of white wines, especially of such as are destined to ultimately become champagnes, the method of conducting the fermentation process is, of course, entirely different. In their case the wine is run off as soon as half the sugar has been transformed (readily determined by the areometer), and either rapidly and continuously agitated with mechanical stirrers in an open tub or made to repeatedly flow from a high vessel into a lower one, in order to mix in with it the greatest possible quantity of air. A current of sulphurous acid is next either pumped through it, or, if the necessary materials for this purpose be not at hand, made to mingle with it by burning sulphur immediately below it, as it flows in a stream from one tun to another. In the district of Frontignan, near the well-known town of Cette, in France, once so famous for its Muscat, but now, like so many other districts, devastated by the phylloxera, we found that this killing of all germs by sulphurous acid was regarded as unhealthy and that it had been abandoned. It is preferred to stop the fermentation by adding a given quantity of alcohol to the liquid at a convenient period of the process, and then to draw off the wines and allow them to clarify in separate vats. As to the commendability or otherwise of any of these practices, we shall have plenty to say at a later stage of our discussion; for the present we prefer to address ourselves first of all to an inquiry into the nature of the chemical and physical phenomena induced in unadulterated grape juice during the various processes we have so roughly outlined. To enter into all the intricacies of such a question would be futile and profitless, and would necessitate a greater tax upon the knowledge and attention of our readers than we have any right to impose; we shall consequently content ourselves with the attempt to convey a general idea of the conclusions that a lengthy experience has enabled us to form. The rough and ready, or *grosso modo* explanation of the chief reactions has hitherto been, that the principally important change from must to wine results from the transformation of the glucose into alcohol and carbonic acid. Like most other explanations of a similarly superficial character, this one, while strictly founded upon fact, is sufficiently incomplete to be not only worthless, but altogether misleading to the uninitiated. The reality, as discovered by modern science, is that, presuming two parts of sugar are capable of producing one part of alcohol, there is never enough spirit found, even after the most complete and lengthy fermentation, to account for more than 85 or at a maximum 90 per cent. of the sugar originally contained in the grape juice. As from 1 to 4 per cent. invariably remain unaltered in the wine, and as it is generally allowed that say 1 per cent. may be lost in the form of evaporated alcohol, carried away by the carbonic acid, it follows that some 9 or 10 per cent. must have undergone some other changes. As to what these changes were the world was in utter darkness until only a few years ago, when, thanks to Pasteur and to Schmidt, the light was let in and the missing link was found. We now know that these percentages of sugar are far from being lost—that they have been transformed into bodies of a most complex nature—the very bodies, in fact, which give to wines their most unvarying and distinctive characteristics. It is by the study and the recognition of these substances by unfailing tests that we have been enabled to establish the *standards of quality* to which we have referred, and it is their absence, or excess, *or existence in unnatural proportions*, that marks the distinction between a natural and an artificial wine. Let us try to make this still more clear, in order that we may completely understand why recourse to analytical chemistry has at length became a factor and a necessity in the wine trade.

(*To be continued.*)

WHISKEY, GOOD AND BAD.

SOME UTTERANCES ON THE SUBJECT BY A CHICAGO PROFESSOR.

"There is no dictionary definition for the whiskey men drink to-day," said E. B. Stuart, Professor of Chemical Technology in the Chicago College of Pharmacy. His specialty is the application of the science of chemistry to manufacturing industries. He is a graduate of Cornell University and of the Columbia School of Mines. Going to Chicago, he was associated with the late Professor Blaney, who was the leading analytical chemist of that community. Professor Stuart is thirty-eight years of age, and his standing among chemists is indicated by the responsible position which he holds in connection with the Chicago college. 'Whiskey," he said, "according to the dictionary definition, is 'a kind of spirit distilled from wheat, rye, maize, potatoes, or grain.' That is not the article which men drink, however."

"What are the ingredients of common whiskey that is sold in the average saloon?"

"The most common whiskey is compounded of commercially pure alcohol, 40 per cent.; of water, 60 per cent. To this is added burnt sugar to give the coloring matter. Sometimes it is flavored with port wine. More frequently the flavor is supplied by prune juice, dried peaches, or dried apples."

"Is this what is called 'manufactured whiskey?'"

"Yes. Not long ago a certain malt whiskey was extensively advertised for its surpassingly pure qualities. That was not whiskey, however. It was made of alcohol, water, prunes and dried peaches. I know, because I analyzed it. When the firm failed, it owed one firm in Peoria $20,000 for alcohol. There are a great many varieties of compounded whiskey. Some take alcohol and water, which are colorless, and add one-quarter or one-eighth of real Kentucky whiskey to give coloring and flavor. When the real Kentucky brand is absent, the compounders—they are called 'mixers'—add certain ethers on which the flavor and odor of whiskey partially depend."

"Where are these ethers obtained?"

"They can be purchased in the market under the name of 'whiskey flavors.'"

"Then the easiest way to make whiskey is to buy the alcohol; add water and color, and sweeten to taste with whiskey flavors?"

"You've hit it. Now, here is a bottle of commercially pure alcohol. It is obtained by converting the starch contained in corn, potatoes, barley, wheat, rye, or any cereal into sugar by the action of malt, and then fermenting the sugar."

"What is fermentation?"

"Submitting the saccharine solution to the action of common yeast at a suitable temperature. By the 'growth' of yeast in the solution alcohol is formed, together with some other substances. Alcohol is then purified by distillation, by vaporization and condensation, termed refrigeration. Repeated distillations are necessary to obtain a tolerably pure product. Up to this point we have a colorless product that is purer than whiskey. It contains nearly double the amount of alcohol that whiskey contains; therefore, if it be reduced by the addition of an equal volume of water it will approximate to the alcoholic strength of ordinary whiskeyf But it will still lack the taste, odor and color of whiskey. The 'mixer' adds the missing elements, and we have the compounded or cheap whiskey."

"Why is it cheaper than Kentucky whiskey?"

"Because in Kentucky whiskey the ethers and other alcoholic chemical combinations which give its characteristic taste and odor are the product of chemical changes which occur slowly."

"How is Kentucky whiskey made?"

"They take the sugar from corn; add yeast; distill it in a simple still in such a manner as to retain some of the 'impurities' which give the characteristic taste and odor of whiskey."

"What are these impurities?"

"Water and substances other than alcohol."

"Are the substances injurious?"

"Some are, and some are not."

"What are deleterious?"

"It is known by physiological experiments what the class of impurities known generally as 'fusel oil' are. Or, I may say, those which exert a deleterious or toxic action on the system."

"What connection exists between fusel oil and Kentucky whiskey?"

"The flavor and odor of Kentucky whiskey depend partially on members of the fusel oil group and partly on the presence of certain ethers. Ether is a chemical combination between an alcohol and an acid. Various acids are formed during fermentation. If the substance is distilled in such a manner as to carry these acids into the whiskey, the ether will be formed spontaneously in course of time. Of course Kentucky whiskey is costlier than the compounded article, the increased cost being due to the 'ageing' process, the cost of storage, the interest on the money, insurance and evaporation or leakage. In three years the loss by evaporation is fully 10 per cent. Kentucky whiskey ripens, so to speak, by natural processes; hence it is alluded to as 'straight' whiskey."

"And compounded whiskey?"

"In the article made by 'mixers' called compounded whiskey, the impurities needed to give odor and flavor are added. Of course, you must remember that while

whiskey is necessarily alcoholic, pure alcohol is never whiskey."

"Why is Kentucky whiskey preferred?"

"Because people regard it as a purer article than the compounded drink."

"Is the popular impression in this particular a correct one?"

"I believe that the essential point is this: If the compounded whiskey were intelligently and carefully manufactured from an alcohol from which all of the deleterious ingredients were removed, it is not necessarily inferior, regarded from a hygienic standpoint, to the best Kentucky whiskey."

"Which is the more palatable?"

"Judged by the standard which a whiskey drinker sets up, the Kentucky beverage is the more palatable. There is, however, no absolute standard. Taste varies, as with wine, brandy and matters of food."

"How can a whiskey drinker apply a test to ascertain the quality of liquor?"

Professor Stuart turned to a large volume and read some fifteen lines describing the formula of the test. Only a chemist could apply it. He continued:

"There is no simple test. Men who will drink whiskey must be careful to secure reliable brands."

"How many distillers are there in the country?"

"Between 200 and 300. The ordinary whiskey sold in drug stores is retailed for about $4 a gallon. The best is retailed at the rate of $9 per gallon. The prices at wholesale are about 50 per cent. less."

"What is 5 cent whiskey?"

"About 30 per cent. of cheap alcohol. At the Indian agencies they 'strengthen' it with red pepper. In Chicago 5 cent whiskey is what is called 'rough' alcohol. The color is produced by cheap burnt sugar. The flavor is obtained by cheap ether. Then 70 per cent. of water is added. The latter is presumably pure."

Over on the North Side, not far from Kinzie Street, the reporter found a "mixer" who would talk. Whiskey "mixing" is an art. Compounders, as a rule, have some knowledge of chemistry, and they are thoroughly informed regarding the substances which, being applied to alcohol and water, are calculated to counterfeit Kentucky whiskey. With the "mixer" the term used is bourbon. Why bourbon? Originally from Bourbon County, Kentucky; but when the "mixer" says bourbon he means corn whiskey.

"What does the whiskey cost which is retailed in barrel houses for 5 cents a glass?"

"From 70 to 80 cents a gallon."

"What does good Kentucky whiskey cost at wholesale?"

"From $2.50 to $4 per gallon. Compounded whiskey is, of course, cheaper. Its price can be graded all the way down to meet the demand."

The statements of Professor Stuart regarding the details of the manufacture of whiskey were read to the "mixer," who commented thus:

"The chemist is correct. There are some fine points which every good 'mixer' has which he believes to be his own discoveries or the result of his own experiments. I know some 'mixers' who can go into a laboratory and surprise analytical chemists, but it is only in relation to compounding whiskey that we can give the chemist points. The discoveries we make do not remain our own exclusive property long, for the chemists analyze our product and generally discover what we use. A good 'mixer' gets a splendid salary—'way up into the thousands. One of the best 'mixers' I ever knew came to Chicago from the Alsatian country. He was worth upon his arrival here less than $100. To-day he owns much valuable real estate and spends $20,000 a year on his family. He was never in any laboratory save his own, and that is a crude affair; but when it comes to 'mixing' he has more secrets than any man in the business. He used to spend four hours a day in experiments. He has discovered some tricks of imitation that have yielded him hundreds of thousands of dollars. He will duplicate any drink that is in demand at a cost that is trifling compared to the price of the original pure quill."

"How is the Whiskey Trust prospering?"

"All right. There are two sides to that controversy and both parties make out a strong showing. The Whiskey Trust does not make an ounce of whiskey. It simply controls the production and prices of various grades of alcohol. Yes, the idea is to make more money. That is also the idea of those who are not in the trust. The party who is on the outside says he wants to control his own goods and manage his own business. That's all right. He says the trust will be obliged to pay for preventing the running of distilleries, which is correct. On the other hand, the trust will be able to manufacture whiskey where the cost of production is the smallest—where there is the cheapest coal, the best railroad facilities, the lowest taxes, and where the facilities are the best for fattening cattle with the slops. The last consideration is an important one, equivalent to at least 8 cents on every bushel of corn. The Great Western Distillery at Peoria can use 5,000 bushels of corn per day. The saving of 8 cents on every bushel is a great item in the cost of production. No distillery in the United States could run a week at a profit if it could not feed cattle."

"Is it not possible to make as good whiskey outside of Kentucky as that State can produce?"

"Certainly; but the Bourbon State has the reputation, and that is a great point in the sale of anything."

ANTISEPTICS.

SOME PRACTICAL HINTS FOR HOME GUIDANCE.

We often neglect the use of antiseptics because they do not happen to be in convenient form at the time of need. The following method I have found to be of practical utility:

Bichloride of Mercury Solutions.—Corrosive sublimate, 232 gr.; muriate of ammonia, 20 gr.; glycerine, 3 oz. Rub the bichloride and ammonia together in a Wedgewood mortar, until thoroughly fine; then add the water; after this the glycerine. The ammonia is simply added to produce greater solubility of the mercury. Keep in a bottle with the prescription pasted on. One dram of this solution contains 7¼ grains of the bichloride. One pint of water added to one dram of this solution gives 1-1000. One dram of this solution added to two pints gives 1-2000. One dram to three pints gives 1-3000, etc. The 1-1000 may be used upon the skin preceding a surgical operation, and for washing the hands, towels, instruments, and to wash out the wound the first time after the operation. The 1-2000 is used in irrigating and to rinse the sponges. The 1-5000 may be used as a vaginal wash and for abdominal operations.

Boracic Acid.—We have the crystals and the impalpable powder. A solution of boracic acid may be kept for general use. Take boracic acid, cryst., 4 dr.; thymol, pulvis., 20 gr. Dissolve the boracic acid in a pint of boiling water; dissolve the thymol in an ounce of alcohol; then mix the two and add 2 oz. glycerine. This solution may be used with compresses on wounds and may be diluted by adding one to eight parts of water, according to the case. The impalpable powder I use in surgical operations by means of a pepper box, applying it with impunity. In the extirpation of tumors, I fill in the cavity and rub it into the wall of the cavity. I inlay gauze muslin with it and apply as a dressing.

Oil of Cade.—I regard this as an excellent dressing in surgical wounds. My method of using is as follows: I saturate cheese cloth with a mixture of one part of cade to three parts of pure olive oil, wringing out the gauze to dryness. A sheet or two of this over the wounds protects the parts and corrects all foul discharges. The adhesive process or the granulating process proceed nicely under its use.—*Am. Med. Jour.*

CROCKERY POISON.

IMPORTANCE OF THE QUESTION PROPOUNDED BY THE "AMERICAN ANALYST."

One of the leading subjects of conversation at present is the question that has been raised by the statement in a contemporary that earthenware glazes are poisonous. The argument in this question has been very one-sided, for all parties with whom we have talked are inclined to regard the idea as entirely unreasonable. One of the fairest, frankest statements we have received was from a gentleman who is in a position to know just what the difference is between vitrified, hard porcelain and regular earthenware, and we think his opinion on the subject is worth more than any chemical analysis. Having once been a manufacturer of earthenware, he knows what crazing means, and presuming that it is crazed goods that are attacked by the critics and alarmists, he claims that the worst that can be said of crazed earthenware is that it becomes discolored and noisome, and therefore disagreeable and unpleasant. If all earthenware crazed, this would be the weightiest objection that could be raised against it. But such is not the case, for the proportion of crazed goods found among the productions of earthenware makers is small in comparison with the volume of goods produced. In fact, we are pleased to say that crazing is on the decrease to such an extent that the majority of makers guarantee to replace all crazed goods after a certain time. It is policy to do this for various reasons. In the first place, manufacturers of earthenware are fully aware of the objections that are prevalent to crazed ware, as well as to the fact that it will occasionally occur in spite of all precautions, and they recognize the equity of replacing crazed goods wherever they may be found. It is readily seen, therefore, that it is impossible that any great proportion of crazed goods should get into actual use. Hence the claim that poisonous matter can be absorbed by food eaten from sound earthenware is empty and without reason. Earthenware in its various grades will continue to be made until the chemists can produce something better that can be made equally as cheap so that it can be bought and used by the masses, and until then people will continue to use it without apprehension of fatal results. It is our belief that if human beings might be exempted from every other danger that threatens life they might live forever on Dr. Hammond's plan and use earthenware eternally. — *Crockery and Glass Journal, April* 19, 1888.

ADULTERATED PAINTS.

ANALYTICAL PROCESS FOR DETECTING THE PRESENCE OF ADULTERANTS.

We present below a scheme for the detection of baryta and lime in ready-mixed paints. To understand this scheme it is necessary to bear in mind that baryta and lime are the usual adulterants in light-colored paints, and that lead and zinc are the basic pigments of all good light-colored ready-mixed paints. No baryta or lime should be found in white ready-mixed paint, and whenever their presence is detected the paint is adulterated. Take a can of outside white, agitate it until all the pigment is thoroughly mixed with the oil, fill an ordinary silver tablespoon three-fourths full, and blow upon this with a blow-pipe the flame of a spirit lamp until the oil is completely burned out. A white or straw-colored amorphous mass will remain; powder this, weigh it, and introduce it into a test tube; add acetic acid 1 ounce, and boil. If it all dissolves, no sulphate of baryta is present; if it does not all dissolve, decant or filter out the acetic acid; set aside the filtrate for further examination, as it may contain lime. To the residue which acetic acid has failed to dissolve add nitric acid 2 drams, and boil. If it all dissolves, the residue is probably lead-soap, and is not an adulterant; but if nitric acid fails to dissolve the residue, it may be

considered as settled that the paint contained baryta; it is settled beyond any question that the paint is not a pure lead and zinc paint. To determine whether the residue which acetic and nitric acids have failed to dissolve is baryta or not, wash it with water and fuse with carbonate of soda; wash the fused mass with water to remove sulphate of soda formed in the fusion; then boil the remaining residue, from which the sulphate of soda was removed by washing, with dilute nitric acid, and filter and mix the filtrate with an equal quantity of a perfectly clear solution of sulphate of lime. If a precipitate is formed it may be considered as demonstrated that the insoluble residue was sulphate of baryta. We have yet to look for lime. This, if present, will be found in the acetic acid solution, which contains also the lead and zinc. These must be removed before the presence or absence of lime can be determined. To remove the lead and zinc dilute the acetic acid solution with four or five parts of water; run into this for one hour a current of sulphuretted hydrogen gas, cork the bottle and allow it to stand twelve or fifteen hours, by which time every trace of lead and zinc will have been precipitated; the lime, if present, will remain in solution. Filter out the lead and zinc, boil the filtrate to drive off the sulphuretted hydrogen, add to a portion of the filtrate a solution of oxalate of ammonia; if a white precipitate occurs, lime is present. The percentage of lime may be determined with sufficient accuracy by evaporating the fluid from which the lead and zinc was precipitated, and weighing the residue. The residue which acetic and nitric acids failed to dissolve may be sulphate of lead or sulphate of lime, as both of these are sometimes used as adulterants. No matter; the insoluble residue is an adulterant. There are a great many things to be considered in work of this kind which we have not noticed, as we wished only to give the most simple process that we have been able to devise which would give a thoroughly reliable result. This scheme will not answer for dark-colored paints, but may be used for lavender, stone-gray, and all light-colored paints. Any tinted paint—anything but white—must be expected to show a very small residue insoluble in acetic and nitric acid, as nearly all coloring matter for paint contains some silica; therefore, a slight residue in tinted paints should not be considered an adulterant. We have purposely used the old nomenclature in this article for the benefit of the older pharmacists who have not yet become familiar with the new. If it is preferred, the pigments may be freed from oil by washing well with ether or the lighter petroleums in lieu of burning, as suggested above, or may be burned out on a charcoal support. We prefer the process as given in the scheme.

We will pursue this subject in subsequent issues, giving schemes for the detection of adulterants in colored paints.—*Drugman.*

SLEEP.

CHEMICAL THEORY OF ITS NATURE AND CAUSES.

Webster defines sleep as taking rest by a suspension of the voluntary exercise of the powers of the body and mind and an apathy of the organs of sense; to become unconscious, a natural and healthy, but temporary and periodical suspension of the functions of the organs of sense, as well as those of the voluntary and rational soul; that state of the animal in which the senses are more or less unaffected by external objects, and the fancy or fantasy only is active. Sleep is attended by a relaxation of the muscles, and the absence of voluntary activity for any rational object or purpose. It is susceptible of greater or less intensity or completeness in its control of the powers. There are some points in the chemical theories of sleep which are worthy of notice, such, for instance, as its periodicity. Again the question occurs, What is the cause of sleep? Roake has shown that the fatigue and recovery of muscles is due to an alternation of the accumulation and discharge of certain "fatiguing substances," chief among which is lactic acid. Preyer, Binz, Obersteiner and others all agree in making *Evenuedungsstoffe* (fatigue substances) the cause of sleep. These accumulate during our waking hours, oxidize readily, and absorb the oxygen of the glands, muscles and nerve centres until further action is prevented, and sleep sets in. When again in turn oxygen has overbalanced the fatigue substances we awaken, Preyer claims that chief among these latter is lactic acid, but so far has not successfully demonstrated it. We know that work is a waste of substance which must be repaired. Armand Gautier has found in the human body a series of organic bases, which he calls leucomaines, the physiological effects of which are narcotic and fatiguing, and the action of these leucomaines is believed to be direct upon the brain, producing intoxication of the brain centres. Professor Errera, before the Anthropological Society of Brussels, has given a *resumé* of some points in the chemical theory of sleep which we reproduce as we find it in *Science.*

A theory of sleep must take account of three factors, work, fatigue, and sleep. The chemical theory satisfies these demands. All work, muscular or cerebral, produces waste products. These accumulate, make work more and more difficult: this is fatigue. As the process continues, the waste-products, notably the leucomaines, intoxicate the higher nerve-centres (just as a dose of morphine does), and render them incapable of action: that is sleep. The picture is, however, much more complex. There is a constant struggle against the fatigue, which for a time, by dint of hard work shown in increased secretions and so on, may succeed. We probably never arrive at the extreme limit of work; the sensation of fatigue intervenes to prevent such a disaster. Fatigue, as is well known, may extend from muscle to nerve, and from nerve to nerve-centre. We may be very tired from repeatedly lifting a weight, and not be sleepy, and may be generally sleepy without any considerable local fatigue. One is peripheral, the other central. As the waste products accumulate in the centres, motion and sensation become more and more sluggish until the time comes when the ordinary stimulation no longer arouses them, and we sleep. Partial sleep can be similarly explained. The centres go to sleep in a hierarchical order, the highest serving the most delicate function going first. In waking, the reverse is the case; the motor centres may be asleep while the intellectual centres are awake. In somnambulism the latter may be asleep while the former are awake.

The depth of sleep according to this theory ought to proportional to the number of cortical molecules in combination with the leucomaines. In the beginning of sleep these are abundant, the cerebral cells inactive, and a combination easy. The sleep is deep. Soon the maximum number of combinations is reached, and sleep is deepest. From here on, the leucomaines are gradually eliminated and destroyed, and sleep should decrease with a decreasing intensity. Kohlschutter's experiments on the intensity of sleep, as tested by the noise necessary to awake the patient, give the curve for the intensity of sleep corresponding to what we should expect by our theory. Variations in our sleep caused by an excess of work, etc., are evidently similarly explicable. In short, fatigue is a poison for which sleep is the normal antidote.

This theory maintains (1) that the activity of all the tissues (and primarily of the two most active, the nervous and muscular), gives rise to substances, more or less allied to alkaloids, the leucomaines; (2) that these induce fatigue and sleep; (3) that on waking, if the body is rested, these substances have disappeared.

To complete the demonstration of these statements much careful experimentation is necessary; but the facts as far as they go make it probable that the chemical theory of sleep will gain in strength as our knowledge advances.

EGGS.

THEIR VALUE FROM AN ECONOMICAL STANDPOINT.

Every element, a writer says, in *Health*, that is necessary to the support of man is contained within the limits of an egg-shell, in the best proportions and in the most palatable form. Plain boiled, they are wholesome. The masters of French cookery, however, affirm that it is easy to dress them in more than 500 different ways, each method not only economical, but salutary in the highest degree. No honest appetite ever yet rejected an egg in some guise. It is nutriment in the most portable form, and in the most concentrated shape. Whole nations of mankind rarely touch any other animal food. Kings eat them plain as readily as do the humble tradesmen. After the victory of Muhldorf, when the Kaiser Ludwig sat at a meal with his burggrafs and great captains, he determined on a piece of luxury—"one egg to every man, and two to the excellently valiant Schwepperman." Far more than fish—for it is watery diet—eggs are the scholar's fare. They contain phosphorus, which is brain food, and sulphur, which performs a variety of functions in the economy. And they are the best of nutriment for children, for, in a compact form, they contain everything that is necessary for the growth of the youthful frame. Eggs are, however, not only food—they are medicine also. The white is the most efficacious of remedies for burns, and the oil extractable from the yolk is regarded by the Russians as an almost miraculous salve for cuts, bruises and scratches. A raw egg, if swallowed in time, will effectually detach a fish bone fastened in the throat, and the white of two eggs will render the deadly corrossive sublimate as harmless as a dose of calomel. They strengthen the consumptive, invigorate the feeble, and render the most susceptible all but proof against jaundice in its most malignant phase. They can also be drunk in the shape of that "egg-flip" which sustains the oratorial efforts of modern statesmen. The merits of eggs do not even end here. In France alone the wine clarifiers use more than 80,000,000 a year, and the Alsatians consume fully 38,000,000 in calico printing and for dressing the leather used in making the finest of French kid gloves. Finally, not to mention various other employment for eggs in the arts, they may, of course, almost without trouble on the farmer's part, be converted into fowls, which, in any shape, are profitable to the seller, and welcome to the buyer. Even egg-shells are valuable, for allopath and homeopath alike agree in regarding them as the purest of carbonate of lime.

DECEPTIVE SENSES.

SOME ERRORS OF SIGHT AND MOTION.

The senses are subject to illusions in proportion to the remoteness of the information that they give from the immediate necessities of the organism. Touch, the most immediate and least inferential of the senses, is least subject to illusions; while sight is so very much so, that the blind often say they have an advantage over the seeing in being free from visual illusions. The illusions of bodily motion are much nearer to those of touch than to those of sight, and yet they can under certain conditions be induced through visual impressions. Of this the writer has recently had two interesting examples. He was standing upon the floor of a railroad depot, the boards of which were laid with a considerable open space between them; and the shadow of an electric light was moving up and down by the swinging of the light in the wind. Looking at the floor, it seemed as though the shadow were stationary, and the floor boards moving. From this it followed that the person on it was moving too, and the writer distinctly felt the swinging sensation; in fact, his attention was called to the phenomena by this feeling of motion. The other observation was as follows: while riding in the

cars and looking out of the window, the trees and all are seen to move in the opposite direction. If, now, one looks in a mirror so situated that it reflects the passing landscape, which, however, must not be visible except in the mirror, one has the illusion of moving in the opposite to the real direction of motion, owing to the reversal of the image in the glass. In both these cases an immediate bodily sensation is induced by a more or less unconscious inference through visual sensations.

TOBACCO USING.

BOTH SIDES OF THE QUESTION STATED.

"In every land and in every clime where the use of tobacco prevails it causes degeneration, degradation, debasement—physical, mental and moral—disease and death, or individual and national decadence." Such is the statement of Dr. George J. Ziegler in an article on "The Tobacco Poison."

"I do not believe there is any more harm in smoking a cigar or pipe, after eating, than there is in drinking tea or coffee. Any luxury carried to excess carries with it a penalty. For my own part, I consider that smoking acts as a sedative and equalizer of the temper, assists digestion, and is a medium of sociability among men which should not be discarded." So says Dr. A. E. Adams, of Danbury, Conn., in an article entitled "Is Smoking Injurious?"

The doctors disagree, says *The New York Medical Journal*, but there can be no doubt as to whose view is nearer the truth. The broad statement of Dr. Ziegler is contradicted not only by general experience, but by the undoubted fact that such countries as Germany and the United States, two nations which are certainly not suffering from decadence, consume three or four times more tobacco per capita than do the Spaniards or Italians, nations of by no means so vigorous a vitality.

The real facts as to the influence of tobacco on the health are fairly well established, and the occasional outburst of anti-tobacco fanaticism does not affect received medical opinion. Tobacco is pernicious to growing children. Used in moderation, the majority of healthy adults can smoke it without harm. It does not in these shorten life or produce degenerative changes. Nearly one-half of Prof. Humphrey's collection of centenarians were tobacco-users. It is particularly harmless to those who live out-doors and engage in physical work. It is particularly apt to injure those who live indoors. The worst feature about its use is the difficulty some persons have in smoking in moderation. This is especially true of brain-workers, and it is for this reason that physicians never advise the acquirement of the tobacco habit. But among the great mass of working people the use of tobacco is apparently a harmless one.

PORCELAIN WARE.

THE POSSIBILITIES AND PROSPECTS OF ITS MANUFACTURE.

From a commercial point of view the most promising prospects for the development and enlargement of the porcelain industry rest on the possibility of producing porcelain plates, dishes, cups and saucers which will be cheap enough to be used "for ordinary" at our meals, or, in other words, on the chances of bringing porcelain table-ware into closer competition with stone chinas. Inasmuch as their comparative fitness for common use depends primarily on the durability of the glazed surfaces, stone china gives the least satisfaction because it has a tendency to "craze" under ordinary conditions of usage, such as warming dinner plates, etc. Moreover, the bodies readily absorb fluids and soft fats through the glaze cracks and allow these secretions to spread and accumulate *under* the glaze, from whence they cannot be removed by ablution. As far as the "crazing" is due to unequal expansion of the conjoined parts, the defect can be avoided to a large extent by improving the compositions; but its occurrence is most frequently due to an inherent or constitutional defect, to the porosity of the bodies.

The glaze, in melting on the bodies, cannot conjoin as evenly nor as completely with them as if they were as dense as porcelain; on account of this want of continuity in its contact with the body it expands irregularly, and sooner or later cracks where the connection is weakest or interrupted. The "undefiled" usefulness of stone china is therefore of comparatively short duration, and, as this shortcoming is apt to stick to the ware in spite of all further attempts at improving it, it is obvious that the demand for porcelain tableware will increase rapidly if the price of the latter can be made to approach more nearly that of its cheaper rival.

The two most recent grades of porcelain table-ware are the "soft" feldspar porcelain and hard porcelain. The body compositions or pastes of both kinds consist in the main of clay, quartz and feldspar. The degree of translucency that can be imparted to the bodies depends on the proportion in which the quantity of feldspar and free silica stands to that of the clay proper or aluminium silicate. The feldspar imparts translucency at a lower temperature of firing, the quartz increases it it in the measure in which the temperature is raised above that of the melting point of the feldspar, and thus the desired translucency can be obtained by more or less intense firing, according to the relative proportions of the vitrifying ingredients. But the respective compounds differ also in behavior and quality. The bodies that require the hardest firing endure or stand the fire better, become more homogenous in it, and can be glazed with more fusible compositions of the same materials, and the bodies of those compositions that vitrify at a lower temperature have to be glazed with compositions which can only be rendered still more fusible than their own by the addition of other substances. Moreover, those body compositions which can be rendered dense and translucent with a comparatively small proportion of vitrifying ingredients, and a correspondingly larger one of clay, are more easily formed and produce the most durable ware. The bodies of feldspar porcelain have, as the name implies, a rather large proportion of feldspar, and on account thereof become very soft in the first or "biscuit" fire, the highest temperature of which borders on ordinary white heat. The "biscuit" which is thus produced is dense and more or less translucent; but it is of rather coarse texture, because the feldspar does not react sufficiently on the quartz at the temperature of its biscuit fire. It is glaze-burned in the second or glaze fire, the temperature of which is kept sufficiently low to prevent the bodies from resoftening in it. This method of glaze-burning is very economical, because it allows of "pinning" and "stilting" the ware in the "saggers," and of filling the latter to their utmost capacity. But in order to make the glaze "flow" or melt on the bodies at the lower temperature, it has to be of such easily fusible composition as to become very soft; it is therefore apt to wear off in actual use, and to be less resisting to the action of fatty acids than may be desirable.

Hard porcelain has to become dense and translucent in the second fire; its biscuit fire is much less intense than its glaze fire, and the temperature of the latter is forced to full white heat, in which the ware shrinks considerably, and softens while the glaze melts on it, so that glaze and body become practically one mass. The biscuit cannot be pinned or stilted for the glaze fire because it becomes too soft in it; each article has to stand for itself, its base being broadly supported or in full contact with the floor on which it rests. The quantity of ware which can thus be placed in the saggers is much smaller than that which can be placed for glaze-burning soft porcelain, and the proportion of dead weight has to be burned along with the ware is consequently much larger. But on account of this method of burning glaze and body can be made nearly identical in composition. Hence hard porcelain table-ware never crazes, resists the file, and is in all other respects the most durable ceramic ware.

The highest temperatures that usually obtain in the respective fires compare about as follows:

	Biscuit fire.	Glaze fire.
Feldspar porcelain, degrees Fahrenheit..	2,300	2,000
Hard porcelain.....	2,000	2,700

From the foregoing it will be readily understood that a virtue is made of necessity in providing feldspar porcelain with a soft glaze, that all the characteristic properties of hard porcelain can only be produced in the same ware by burning it hardest in the glaze fire, and that the cost of production is governed largely by the method of burning which has to be employed. In view of these conditions, decisive changes in the competitive position of porcelain can only be looked for in the direction of obtaining, on the one hand, more thorough reactions in the usual burning of feldspar porcelain, and on the other of bringing about the reactions of the hard porcelain glaze fire at a lower temperature. This is only possible if a portion of the feldspar in the usual compositions can be replaced with some other new ingredient that reacts more energetically on the quartz, and with more of quartz and less of feldspar produces as much or more translucency as the usual components do in the usual proportions. This ingredient should also render the other vitrifying components, or the compounds which it forms with them, somewhat less fluid or more pasty in melting, so that they can hold the clay particles, which they surround, together more firmly. These conditions being secured, the feldspar porcelain bodies could be made thinner and less clumsy without running the danger of losing their proper shape in the biscuit fire, their glaze being made harder and more similar in composition to that of the bodies, and hard porcelain table-ware could be produced by biscuit-burning them the bodies in the porcelain glaze fire and by glaze-burning in the soft porcelain biscuit fire. These peculiarities and the new ingredient are not utopian; they are, in fact, easily demonstrable realities, which await the time of their recognition.

Refined slag is the new ingredient. One ton of it will cost about as much as two tons of feldspar. In order to understand how its use at such a price can cheapen the cost of feldspar porcelain, it must be borne in mind that porcelain is not sold by weight, and that the larger quantity of ware which can be turned out of the same quantity of refined material, when refined slag and more of clay are used in the composition, more than repays for the increased cost of the latter. The ponderous hotel china and all table-ware of similar massive proportions can be made considerably lighter, without increasing their fragility, if the respective compositions are improved, and the selling value of the finer sorts of ware usually increases with their lightness.—*A. D. Elbers in Eng. and Mining Journal.*

Hoboken, February, 1888.

PAPER CARS.—Paper railway cars are suggested as a possibility of the near future.

FIRST ECLIPSE.—The first eclipse upon record was a lunar one, and was observed at Babylon 721 B. C.

ICE LENS.—An experimenter recently made a lens of ice, with which he was able to light pipes by means of the sun's rays.

ELECTRIC WATCHES.—A company has been formed in Berlin to manufacture electrical watches. Two small cells and a small electric motor take the place of the ordinary movement.

TO DESTROY CRICKETS.—You may try these: 1st. Sprinkle a little chloride of lime powder near their haunts. 2d. Mix with some roasted apples a little white arsenic, and put it near their runs; they are very fond of this, and it quickly destroys them. 3d. Mix arsenic and honey into a paste, or make a powder of oatmeal and arsenic, and let them be spread on pieces of paper.

DOMESTIC DIETETICS.

SEASONABLE FOOD.

May.

MEATS. — Beef, lamb, mutton, veal, ham, kidneys, liver, sausage.

GAME AND POULTRY.—Brant, pigeon, snipe, chicken, duck, goose, turkey.

FISH. — Anchovy, bass, catfish, clams, cod, eel, flounder, halibut, herring, lobster, mackerel, perch, porgie, prawn, rock fish, salmon, salmon trout, sardines, sea bass, shad, shrimp, sturgeon, trout, turtle, weakfish, whiting.

VEGETABLES.—Artichokes, asparagus, beans, carrots, cucumbers, garlic, lettuce, onions, parsley, parsnips, potatoes, radishes, rhubarb, spinach, sprouts, watercress.

PRACTICAL RECIPES.

CHICKEN PANADA.—Cut some delicate slices of cold chicken, put the white meat into a mortar, pound it to a paste with a little weak broth or milk and water, season with a little salt, a little white pepper, a grate of nutmeg, and a very small piece of lemon peel. Mix with broth, or milk and water, to the consistency of cream; boil gently for a few minutes, and serve with two or three strips of light milk bread, toasted a pale golden brown. This conveys great nourishment in small compass.

LYONAISE POTATOES.—Cut one pint cold boiled potatoes into small pieces and season them with pepper and salt; add one teaspoonful chopped parsley; put a teaspoonful butter on the fire in a saucepan; when hot add a slice of onion; fry brown; add potatoes, and fry to a light brown.

CORN CAKES.—Scald one pint of meal; when partially cooled add half a teaspoonful salt, a teaspoonful sugar, one egg well beaten, and mix with sweet milk or warm water, making a thick batter. Then add two teaspoonfuls Horsford's baking powder; stir thoroughly, and bake immediately in shallow pans in a quick oven.

ROASTED SALMON.—Take a large slice of the middle of a very fine salmon; dredge well with flour, and while roasting, baste it with butter. Serve. Garnish with lemon.

CABINET PUDDING.—Boil one pint and a half of new milk, with sufficient loaf sugar to sweeten it; the peel of a fresh lemon, cut thinly, a little cinnamon, mace and cloves. Boil all these ingredients as if for a custard. Beat up nine eggs, omitting the whites of four; pour the boiling milk, etc., on to these, stirring continually during the operation; then strain the whole through a hair sieve, and let it stand till cold. Take a good-sized pudding mold; butter it well, and line it with sponge cakes cut into thin slices (it will probably require four or five); pour the custard into the mold, and tie it close. It will take an hour and a half to boil. It is an improvement, after buttering the mold, and before placing the sponge cakes, to arrange some stoned raisins, slices of candied peel, and nutmeg. Serve hot, with sauce.

LILLIE CAKE.—Two cups pulverized sugar, one cup butter, one cup corn starch, one cup milk, whites of five eggs, one and one-half teaspoonfuls Horsford's baking powder, two cups flour; stir the starch in the milk, beat the butter and sugar to a cream, stir in the starch and milk, and last the eggs; flavor with lemon or almond.

RHUBARB TART.—Make a good rich paste, roll out and cut into pieces about four inches square; bake a fine brown. Have some rhubarb stewed, sweetened, and cold. When ready to serve, lay the freshly baked pieces of crust on a flat dish and pour rhubarb over them. Should be eaten at once.

COCOANUT PIE.—One cup of white sugar, butter size of a hen's egg, whites of three eggs, well beaten, one tablespoonful of flour, three-quarters of a grated cocoanut, and milk of cocoanut added last, or a tablespoonful of milk, scant measure. Bake on pie plates lined with puff paste.

SLAW DRESSING.—Heat together to boiling point in a stew-pan, a gill of vinegar and an ounce of butter. Stir in an egg well beaten and a gill of sweet cream. Season to taste and pour over finely chopped cabbage. Another way is to mix together a gill of water and a gill of vinegar; thicken with half an ounce of flour. Cook two minutes, add an ounce of butter and season to taste.

CHEMICAL DISCOVERY. — Cavendish, in 1766, discovered hydrogen; and between 1774 and 1779 Priestley discovered oxygen, azote and nitrous gas.

FORESTS AND RAINFALL.—In concluding a paper in *Science* upon the question whether forests influence rainfall or not, Henry Gannett says: "It seems idle to discuss further the influence of forests upon rainfall from the economic point of view, as it is evidently too slight to be of the least practical importance. Man has not yet invented a method of controlling rainfall."

MAGIC STONE.—A precious stone of much interest has been discovered in Colorado. It is an opaque white hydrophane. The finder calls it "magic stone," because, as usual with this mineral, it has the property of becoming transparent if water is dropped slowly on it from one to three minutes. It is so porous, that it will absorb its own weight in water. It quickly recovers its opacity.

WATER SOFTENER.—Mr. Maignen last year made a successful and satisfactory exhibition of his process for softening water by means of the material called "anti-calcaire." Steam boilers which had already become slightly incrusted with lime were worked for two years with water softened by anti-calcaire without attention. When opened they were wholly free from incrustation, showing that the material had not only prevented the effect taking place, but also destroyed what incrustations had already accrued.

ELECTRIC MOTORS.—The *Manufacturer and Builder* declares that there are at present no less than 10,000 electric motors in use throughout the United States. The uses to which these are put are extremely varied; they embrace the running of sewing machines, printing presses and ventilating fans, operating dental instruments, driving street cars, coal and ore haulage in mines, pumping water, washing bottles, and in machine shops, shoe factories, book binderies, knitting works, etc.; for miscellaneous uses they are becoming quite common.

THE TEREDO.—The teredo (the insect so destructive to wooden piles, etc., in our harbors) is still ahead of the inventors who seek to thwart him. In 1882 piles coated with patent anti-teredo coverings were driven in the harbor of San Francisco. Recently these were pulled up in order to see the result. A pile coated with Pearce's compound composed of paraffine, limestone, kaolin, etc., was found to be completely honeycombed by the teredos. The eucalyptus and cedar piles were also nearly destroyed. In 1884 the two piles encased by A. W. von Schmid in sewer pipe and cement, the twenty-three coated by Frank Shay with asphalt and wire cloth, the ten of McKeon & Co., coated with warm cement containing a poisonous substance, and those of W. H. Hayes coated with Portland cement, etc., were examined by Col. Mendel and Mr. Manson. All showed signs of having proved failures.

MEXICAN TELEGRAPHS.—It is very interesting work keeping up telegraph lines in Mexico. Travelers on horseback in northern Mexico traversing these vast, treeless and melancholy plains stop at night for camp, and, finding the telegraph poles accessible and admirably seasoned, cut them down for firewood. And this is not all. The humble ranchero, desiring a stock of wire with which to fence in an enclosure, goes with his peon servants and cuts down a mile or two for use, leaving poles oftentimes prostrate. Wireless poles, and also long stretches of wire without poles, are often seen. And the poles brought so far at so great an expense have other enemies besides man. There is the insignificant looking worm, the "jengen," which insidiously honeycombs the poles till some fine day they fall at the breath of a breeze, strewing fragments of wood over the ground This is a formidable opponent of telegraph communication in Mexico, and any bright American who can show how to keep it out of the poles may fairly demand a reward from the Mexican Government.

REVIEWS OF NEW BOOKS.

A MANUAL OF MEDICAL JURISPRUDENCE, WITH SPECIAL REFERENCE TO DISEASES AND INJURIES OF THE NERVOUS SYSTEM. By Allan McLane Hamilton, M.D. New York: E. B. Treat.

This valuable work is presented by its distinguished author as an elementary treatise and book of reference for both the legal and the medical professions. Its scope is limited to the conditions of the nervous system which are conspicuous as the bases of litigation comprising the following classification: Insanity; hysteria and feigned diseases; epilepsy; alcoholism; suicide; cranial injuries and spinal injuries. Many of the numerous cases cited are familiar to medical men as well as to students of medical jurisprudence, but in no other work that we are acquainted with are such an array of illustrative cases massed together in a single volume. A synopsis of the chapter on insanity will serve to show the comprehensive character of the book, the cases cited throughout being, it should be understood, drawn as far as possible from American sources, so as to meet the requirements of American practice. The first chapter defines Insanity, its general indications, classification and hereditary influence, including post mortem examinations of the insane (with plates of the typical and a typica brain). Under the Legal Relations of Insanity we have Legal tests; the Guiteau case; Physical tests; Duties of medical experts; Tricks of counsel; Illusions, hallucinations and delusions; Reasoning mania; Contracts made by the insane; Testamentary capacity; Old age and dementia; Undue influence; Medico-legal relations of aphasia; Marriage and insanity; Insurance frauds; Responsibility of deaf and dumb; Criminal responsibility; Responsibility in relation to imbecility; English test of responsibility; American decisions on it; The test of right and wrong; Impulsive insanity; Commitment of lunatics and State laws regulating it; Concealed and feigned insanity, etc.

CONTRIBUTIONS TO THE STUDY OF THE HEART AND LUNGS. By James R. Leaming, M. D. New York: E. B. Treat.

This volume comprises a series of papers or monographs on cardiac and pulmonary diseases, which have appeared in various medical journals and transactions of medical societies. The essays are divided into three parts: First, those pertaining to the respiratory organs; second, those pertaining to the heart; and third, those of a miscellaneous character, relating to both or either of the first two divisions. Auscultation is treated at length, as well as pleuritis, bronchitis, phthisis, pulmonalis, pleurisy, and the mooted question of the contagiousness of consumption, which Dr. Leaming is inclined to regard as impossible.

LECTURES ON DISEASES OF THE HEART. By Alonzo Clark, M. D., LL. D. New York: E. B. Treat.

The volume before us embodies the substance of the author's lectures on heart diseases, delivered during a period of several years, before his classes in the College of Physicians and Surgeons. In preparing the lectures for publication, Dr. Clark has increased their substance by the addition of reports of cases collected from a vast range of literature on the subject, and from his own personal observation. The seventeen lectures in the book cover all the various conditions of heart disease in a clear and comprehensive manner, calculated to make it a work of great practical utility to both the medical student and practitioner.

PHOTOGRAPHIC ILLUSTRATIONS OF SKIN DISEASES. By George Henry Fox, A. M., M. D. New York: E. B. Treat.

This is a reproduction of a well known work, whose value has been thoroughly attested to by the physicians

of this and other communities. Dr. Fox's large experience in the special field it occupies, qualified him in an eminent degree for the preparation of so important a work. As surgeon to the skin disease department of the New York Dispensary, where upward of five thousand cases are treated annually, he had ample amount of clinical material from which to make selection. The work consists of forty-eight quarto plates, taken from life and carefully colored by hand, with an accuracy of representation greater, it is believed, than any lithographs or colored photographs that have ever been published. It is issued in twelve parts, four of which are before us, each comprising four colored plates, ten by twelve inches in size, on heavy card board, with two pages of text to each plate.

ELEMENTARY TEXT BOOK OF PHYSICS. By Prof. William A. Anthony, of Cornell University, and Prof. Cyrus F. Brackett, of the College of New Jersey. New York: John Wiley & Sons.

This is the third edition of a highly valued text book, by two well known American professors. The design of the authors has been to present the fundamental principles of Physics, the experimental basis on which they rest, and, so far as possible, the methods by which they have been established. Illustrations of these principles by detailed descriptions of special methods of experimentation have been omitted, leaving their place to be supplied from the resources of the instructor's cabinet. The pictorial illustrations given accordingly are merely the simple diagrams requisite to elucidate the text, the result being a notable saving of space. As a college text book the present work is noteworthy, on account of its being the only new one on the subject of Physics that has appeared in this country for a number of years.

THE AMERICAN ANALYST.

SOME OF THE PLEASANT THINGS SAID ABOUT IT.

The following is taken from the editorial columns of the *N. Y. Herald* of March 29:

JOURNALISTIC.—The AMERICAN ANALYST AND PRACTICAL COOK AND HOUSEKEEPER is a semi-monthly publication of this city engaged in the good cause of suppressing food adulteration and all manner of culinary atrocity, and apparently worthy of itself and its long name.—*N. Y. Herald, March 29, Editorial.*

The Bridgeport (Conn.) *Standard* of April 12, says:

"The AMERICAN ANALYST is a semi-monthly journal which, though its cost is trifling, is a valuable advocate for the family and consumer. Adulterated food, domestic dietetics, every day suggestions, pure foods, practical recipes, and health notes in general, are the subjects treated, and the editorial department is conducted in a way that cannot fail to benefit the careful reader. The cost is but $1 a year. Send to ANALYST Publishing Co., 19 Park Place, New York.

THE BRAIN.

RELATIVE MENTAL CALIBRE OF THE SEXES.

Leaving the physical side, let us now compare the mental calibre of the two sexes. The first argument always brought ought out by the medical profession is the *a priori* one derived from brain weight. A woman's brain weighs less than a man's brain; therefore, it is argued, she must be inferior to him in mental power. In the first place, however, it is by no means certain that a large brain is superior to all smaller brains. Brain power depends, authority tells us, first, upon quality; secondly, upon activity; thirdly, upon size. The man who possessed the heaviest brain yet weighed was an American blacksmith, who does not seem to have been otherwise remarkable, even for the excellence of his iron work. However, admitting that if the quality and activity be equal, a large brain is superior to a smaller one, it is still uncertain whether or not women possess smaller brains than men in proportion to their size. When we consider how much of the brain is occupied in controlling muscular movements, it is obvious that the larger animal needs the larger brain to exert the same mental power than the smaller animal. How much less, if any, the female brains weigh in proportion to size has never yet been calculated. Even the average weight of the female brain is not exactly known, as every experimenter gives a different result. Parchappe estimates that the proportion of the female to the male brain is 909 to 1,000. Surely the difference of stature would allow a difference of weight greater than this. Other inquirers give different figures. One of the best-known tables is that quoted by Professor Huxley in his "Man's Place in Nature," where the results seem adverse to feminine pretensions. Allowance must, however, be made for the following considerations: In the cases of men a larger number of brains were weighed, among which were included the brains of many celebrated men, especially collected for this object. The women's brains were much fewer in number, taken from the lowest source, and did not include the brain of one woman of distinction. A comparison of such material is obviously unfair. Yet amongst the female brains the heaviest brain known to science up to that time was discovered. It weighed several grammes more than the brain of Cuvier. Since that time, however, though great pains have been taken to ascertain the brain weight of celebrated men, not one record exists of the brain weight of famous women. The brain of George Eliot was especially remarkable. The following passage occurs in her life: "Mr. Bray, the enthusiastic believer in phrenology, was so much struck with the grand proportions of her head that he took Marian Evans up to London to have a cast taken. He thinks that, after that of Napoleon, her head showed the largest development, from brow to ear, of any person's recorded."

RELATION OF DIET TO DREAMS.—"Ah, if our dreams only came true," sighed the young man that boards on South Division Street. "Last night I dreamed that I called on a lord. I find that I can control my visions to a considerable extent by dieting. For instance: If I wish to enjoy a calm night, I eat toast or bread and milk just before retiring. If I wish to have a little excitement, quarreling, disputing or a little active exercise, I eat squash pie. I have found, from experience and observation, that squash pie acts on the posterior part of the brain, where lie the bumps of combativenes and acquisitiveness. I have known times when the consumption of two pieces of squash pie has led me to slay a man for his money within fifteen minutes after going to bed. To make my brain a chamber of horrors, however, I sit down an hour before bedtime and eat three sardines, six olives, a little Rochefort cheese with crackers, washing the whole down with a bottle of Bass. Before morning I charge single-handed with my razor on herds of wild horses and jump from sundry steeples. Oh, yes, it is possible to control one's dreams; and when we understand psychology aright, we can lie down and map out our dreams as we map out a day's work."—*Buffalo Courier.*

CLOVER HONEY.—It is estimated that to collect one pound of honey from clover 62,000 heads of clover must be deprived of nectar, and 3,750,900 visits from bees must be made.

WAR HORSES.—The number of horses which the leading nations of the world can furnish for war are as follows: Russia, 21,570,000; America, 9,500,000; Argentine Republic, 4,000,000; Austria, 3,500,000; Germany, 3,350,000; France, 2,800,000 horses and 300,000 mules; England, 2,700,000; Canada, 2,624,000; Spain, 680,000 horses and 2,300,000 mules; Italy, 2,000,000; Belgium, 383,000; Denmark, 316,000; Australia, 301,000; Holland, 125,000; Portugal, 88,000 horses and 50,000 mules.

SMOKE ABATEMENT BY ELECTRICITY.—A Vienna engineer has just taken out a patent for a new smoke-abating process. By means of electricity he proposes to condense the solid part of the smoke as it arises from the coal, the carbon thus formed falling back into the surface.

ANCIENT SOAP.—According to a lecture by Dr. Stevenson Macadam, the remains of a well organized soap factory have been found in the ruins of Pompeii. Soap factories existed in Italy and Spain in the eighth, and France in the ninth centuries. The manufacture in Great Britain was first heard of in the fourteenth century. White soap is generally prepared from tallow, with a little lard and palm oil. In yellow soap, resin is added. Soft soap is prepared from fatty substances with potash. Cocoanut oil soap has the advantage of being usable with sea water, and is often called marine soap. Carbolic acid soap contains about 2 per cent. of carbolic acid, and has antiseptic as well as washing properties. In toilet soaps, as in old brown Windsor, when they are kept for a long time, the soda is influenced by the air and has its strong properties neutralized. Then it is remelted and stored up again, and remelted a second time, when it becomes soft and tender; but the toilet soaps of the present are not always given time to age.

THE PHONOGRAPH.—It is somewhat premature to speculate on the uses of the phonograph, but we venture the suggestion that some day it will take the form of an automatic novel reader, with each character speaking, as it were *inpropria persona.* That is the phonogram will be produced with the various voices as in nature, all the inflections of passion, sorrow, sympathy, ridicule and sarcasm, and songs, etc., uttered to it originally by professional elocutionists, dialecticians and singers. Certainly a novel gotten up in that way would be a great treat,

BUSINESS NOTES.

NEW YORK TO THE FRONT.

A MATTER WHICH CONCERNS YOU.

The following unsolicited opinions from your friends and neighbors, men and women whom you know and respect, ought to carry conviction to any doubting mind. These words of gratitude are from those who have been afflicted but are now well, and the persons giving them are naturally solicitous that others, troubled as were they, may know the means of cure. There is no reason why you should longer be ill from kidney, liver or stomach troubles. You can be cured as well as others, do not longer delay treatment, but to-day obtain that which will restore you to permanent health and strength.

NEW YORK (143 3d Ave.), Feb. 19, 1888.—After using "Warner's Safe Cure," I take pleasure in stating that I have found it the greatest remedy for the kidneys in the world. I would inform you that I followed the profession of a "pedestrian" for upwards of twenty years, and am proud to state that I retired as Champion Endurance Pedestrian of the world. I then became manager of Walking and Bicycle Matches. The severe strain told upon my kidneys. I suffered untold misery. I was induced to try "Warner's Safe Cure," and after taking six (6) bottles, I am enabled to say I am better than I have been in ten years. I will with pleasure answer any parties who may desire information.

Harry Brooks.

BROOKLYN (458 Henry St.), Jan. 31, 1888.—Last summer I suffered much from malaria, and was recommended by a friend to try "Warner's Safe Cure," and am pleased to say it worked a most successful cure.

James D. Munoz

NEW YORK CITY (157 W. 23d St.), Jan. 25, 1888.—For about 10 years, up to three years ago, I was suffering the most excruciating and unbearable pains in the left side, continually belching up wind, with a tired and languid feeling. I am a conductor on the Elevated Railway, and was when I commenced taking "Warner's Safe Cure." I used to lose on an average four days every month with these horrible pains. I tried lots of doctors and lots of medicine, but of no avail, until a friend came along and told me about "Warner's Safe

Cure." I think I took about 18 or 20 bottles, entirely driving the pain away, relieving me of that languid feeling, giving me a better color and good appetite.

Abraham C Johnson

NEW YORK (No. 30 E. 22d St.), Feb. 3d, 1888.—My son has been taking "Warner's Safe Cure" for two years, and he seems to be entirely cured of his trouble, which the doctors pronounced at that time Bright's Disease.

H. N. Libbe

BROOKLYN (141 Myrtle Ave.), Feb. 19, 1888.—I have been employed on the Union Ferry Co. since 1848, and enjoyed good health until I was ruptured 23 years ago. Five years ago I was cured of the rupture, and then taken with Hydrocele and was operated on by Dr. Burnham, of New York City, the last operation being performed in 1886, at 222 Pearl St., Brooklyn. Since that time I have had a gathering of water in the stomach and weakness of the kidneys. Last fall I was recommended to take "Warner's Safe Cure," and since that time I have found great relief in my kidneys and stomach.

Capt John Cole

MALARIA.

While the gross misuse of the term, malaria, has given it a vague and uncertain signification, the word embodies, nevertheless, so much truth that it will always hold an important position in the vocabulary of daily life. Etymologically, malaria means bad, or unhealthy, air; it being taken from the Italian *mala*, bad, and *aria*, air, or atmosphere. Its first use, so far as literature shows, was in regard to the poisonous atmosphere which overhangs the Roman campagna, and which has been so fatal for centuries to all who entered that district. The investigations of chemists and physicists showed that the unhealthful nature of air in malarial lands was due to two causes; one, the abnormally large percentage of carbonic acid, ammonia, and other gases and vapors, resulting from the decay of animal and vegetable matter; and the other, the enormous development of all forms of germ life, especially those which prey upon the human organism, and which either produce or intensify certain zymotic diseases.

Where, as in excavations, street openings and sewer systems, malaria obtains, science has limited its ravages by wholesale disinfection. Men have also learned that many forms of vegetable life destroy malaria. The sunflower, the blue-gum tree, the mint and peppermint exert this invaluable influence, and are used to-day in every part of the country where decaying organic matter once produced malarial diseases.

In the preventing and curing of malarial disease, however, the highest improvement has been attained. The poison acts in two ways, on account of its double nature. The gaseous elements enter the system and pass into the blood, making this impure and devitalized; the germs force their way into the organization, and either produce disease or else intensify the trouble already occasioned by the deleterious gaseous elements. The only preventive, the only cure in such cases is the use of a superior blood purifier, which shall increase the vitality, stimulate the great functions, and so purify the blood and system. The remedy which will best accomplish this result is Ayer's Sarsaparilla. This, a simple, scientific combination of the most powerful alteratives, strengthens the body, increases the activity and work of the excretory and secretory organs and expels from the blood all humors and impurities, no matter what their nature or origin. Useful as a cure, it is more useful as a preventive. Employed regularly, it will keep the body healthy, sound and vigorous. A sensible person will bear in mind these facts: That all marshy land should be drained and, where necessary, disinfected; that sunflowers, blue-gum trees, mint and peppermint are the best hygienic ornaments to his yard, garden or farm; that his plumbing, cellars, sewers and cesspools should be periodically treated with strong antiseptics and deodorizers, and that the use of Ayer's Sarsaparilla will prevent any and all of the malarial diseases, and will also cure them whenever they have put in an appearance.

LEA & PERRINS' SAUCE.

Lea & Perrins', the original and genuine Worcestershire Sauce, has been before the public over a half a century. Like all popular favorites it has long been the standard of comparison and the pattern for counterfeiters who not being able to imitate its excellence offer to the public imitations in bottling, labels and style of putting up. They dare not counterfeit the signature of Lea & Perrins which is on the red label of every genuine bottle, and of which this is a facsimile.

Lea & Perrins

To be sure of obtaining the genuine article, see that the above signature is on the label.

Analyze "MONON" Resolutions!!

Whereas, The Monon Route wishes to make known to the world that it has the finest system of Pullman Buffet Sleepers and Chair Cars, running between Chicago and Louisville, or Chicago, Indianapolis and Cincinnati;

And Whereas, This makes it in fact the double connecting link of Pullman travel between the winter cities of Florida and the northern summer cities; then

BE IT RESOLVED, That, before starting on a trip, be sure and address E. O. McCormick, Gen'l Pass. Agent, 185 Dearborn St., Chicago, for rates, etc.

"THE NATIONAL ALLIANCE," LOCATED IN TEMPLE COURT, NEW YORK.

The above named admirably managed and enterprising company transacts the business of life insurance upon the natural premium plan and furnishes pure life insurance at cost, and it has been phenomenally successful. Its first policy was issued the 7th day of November, 1885, and on the 1st of January, 1887, it had in force 1,698 policies covering an insurance of $6,972,000. The business had increased the 1st of January, 1888, to 2,748 policies, amounting in the aggregate to $11,142,000. This is a most wonderful record, and its future gives evidence of continued prosperity. Its balance sheet, January 1, 1887, showed $16,857 to the credit of the company, and one year subsequently, including premiums in course of collection, and since paid, the cash balance was $78,362.14. The total liabilities were only $10,000 on two claims, which have since been paid. All death claims since the organization of the National Alliance have been paid in full, on or before maturity. The actual mortality for 1887 was approximately 66 2-3 per cent. lower than the American Experience Mortality tables. Six full bi-monthly mortuary premium rates of the National Alliance are equal to the American table, with 33 1-3 per cent., added for the Reserve Fund. The full number of mortuary premiums for 1887 were not required, and but one-half were collected, the reduction being equal to a dividend of 50 per cent. Twenty-five per cent. of the amount of premiums collected are carried to the Reserve Fund, which is deposited with the Central Trust Company of New York to provide for future requirements, and to provide for any mortality in excess of the American Experience Mortality tables. The expense premium on new insurance is included in the bi-monthly mortuary premium rates, and the actual mortality is adjusted semi-annually. The bi-monthly cost of insurance is equitably adjusted to the annual cost of insurance as experience determines by lapse of time and the careful selection of risks. The President of the National Alliance, Mr. H. M. Munsell, is well and favorable known as an able and energetic man of good executive abilities. The Secretary and Actuary, Mr. A. C. Hunt, is equally well known and stands deservedly high in insurance and business circles. The Medical Director Mr. H. C. Lyttle, is a gentleman of large experience in the life insurance business, and has the interests of the company constantly in view.

The Board of Directors number in their ranks many of our most eminent business men, financiers and great lawyers, and is most efficient and considerate of the welfare of the company.

A GIGANTIC UNDERTAKING.

The tremendous storms of the last three or four winters have made dangerous inroads upon the beach at Coney Island, and more particularly at the recent site of the Brighton Beach Hotel. The entire coast line was washed away immediately under and adjoining the hotel, and as a matter of safety a removal of the immense structure was demanded. This work could not be accomplished by ordinary means; but a man was found equal to the occasion, and in spite of the doubts of others the plan has proved eminently successful, and is an accomplished fact. "Nothing succeeds like success," as has been demonstrated by Mr. B. C. Miller, the able and indefatigable contractor whose genius has proved equal to the work in hand. It was a gigantic undertaking attended with many serious difficulties, and many builders and contractors predicted its failure.

The hotel, many thousand tons in weight, was raised by jack screws and placed by means of a hydraulic jack on trucks resting on an improvised railway track. A strong cable was attached to the trucks, and the building was drawn across the treacherous sand by powerful steam locomotives, six in number and of uniform power, and the strain was equalized as far as possible, and the removal steadily but cautiously proceeded without unnecessary delay. The mode of removal was in every respect novel, and had never been tried before either in this country or any other. Mr. B. C. Miller, the contractor, watched every movement and directed every feature of the job, and without his personal supervision the result might have proved less satisfactory.

The immense structure sustained but little, if any, injury to its walls or any portion of the building by the removal, although it at first appeared well nigh impossible to keep the walls from seriously cracking or tumbling down altogether.

Too much credit can hardly be awarded to Mr. Miller for the manner in which the above difficult work was accomplished in the face of what seemed insurmountable obstacles.

Brighton Beach Hotel now stands in full view of the ocean, about four hundred feet removed from its former site, and in a most favorable and commanding position.

The contractor for the work is Mr. B. C. Miller, of the firm of Messrs. B. C. Miller & Sons, of 979 Bergen Street, near Atlantic Avenue. The senior partner has been engaged in business twenty-seven years, and

has moved hundreds of buildings of all sizes, and constructed respectively of wood, brick or stone, and in every instance with the most satisfactory results.

NUTRITIOUS BAKING POWDERS.

By Prof. Doremus, of Bellevue Medical College, N. Y

It is a serious problem for the physiological chemist to discover the best method of supplying the human system, especially an exhausted one, with the requisite amount of phosphatic food for the organism to remain in health. The phosphatic salts are never wanting in the most nourishing varieties of food, whether vegetable or animal. They are closely allied to all the vital functions, are constantly being eliminated from the body, and must be replaced by a fresh supply. The testimony of thousands goes to show that under the prevalent conditions and habits of American life, there are few who are not greatly benefited when they partake of these same phosphates as restorative agents. The sales of phosphatic preparations for medicinal use, or as a mild tonic, have assumed enormous proportions.

On April 22, 1856, Prof. E. N. Horsford secured his letters patent for the manufacture and use of an acid phosphate of lime to be incorporated with starch and bicarbonate of soda, and thus serve as a baking powder. This is the first instance in which, besides acting as an aerating agent, a baking powder was to add nutritive elements to the bread. Phosphatic powders are to-day the sole exemplification of this important principle. The natural phosphates removed from the grain in the process of bolting the flour, are by Horsford's method restored through the baking powder. While the residues which all baking powders leave, except those which consist of salts which volatilize completely under the heat of the baking oven, are of a nature which makes it a matter of doubt whether they should be introduced into the system, in case of the phosphatic powders the residue is of positive value and is not foreign to the flour, but composed of the same salts, practically, which form the ash of the cereal grains.—*Scientific American.*

The Old Reliable "Horsford's Bread Preparation" is made by Prof. Horsford's process.

VIBURNUM COMPOUND.

Viburnum, although apparently the principal ingredient in Hayden's Viburnum Compound, is not the most important.

BEAUTIFUL CHEMICAL PREPARATION.

A snow white mass of caffeine, the chemical principle of coffee (200 pounds and of great value) is now on exhibition in the window of William R. Warner & Co., 1228 Market Street. This beautiful crystallization represents ten tons of coffee, and is used as an ingredient in the preparation of bromo soda, prescribed for the cure of headaches, migraene, nervousness, sea sickness, etc. —*Philadelphia Inquirer.*

GRANITE OR AGATE IRON WARE.

In our issue of April 15th a correspondent asks the question if the danger of lead poisoning, ascribed to the glazing of crockery and porcelain, also applied to glazed iron or granite ware. The answer given was "Yes, unless it was properly glazed by recent processes." This answer might be misconstrued to the detriment of the beautiful granite or agate iron ware made by the St. Louis Stamping Company or the Lalance & Grosjean Manufacturing Company, which are entirely different goods from the common iron, gray or enameled ware. This granite or agate iron ware is perfectly safe, free from defects, and contains no lead or other poisonous substances in the glazing. We have made a very careful examination of these goods, and find ourselves able to recommend them very highly to our readers. This ware is made of sheet iron, pressed into shape by powerful hydraulic pressure, and coated with a pure vitreous enamel, which is unequalled for tenacity and power of resisting acids. The surface being hard and smooth, it is easily kept clean, and will not rust nor break. All articles made by this process are very light, yet strong and durable, and in shape are graceful and gotten up with good taste.

SOMETHING NEW IN TEAPOTS.

Paine, Diehl & Co., of Philadelphia, have put upon the market an ingenious contrivance by which coffee or tea can be poured without lifting the pot. The pot itself is tasty in appearance, made of Britannia metal and can also be had silver-plated and of different sizes. The device by which the liquid is poured without raising the pot, consists of an inverted air chamber fitting into the top of the pot and communicating with a hollow button on the top. By simply raising this air chamber, pressing the finger on top of the button so as to prevent the egress of air there, the air pressure causes the liquid to discharge from the spout. For further information, send for a circular.

RUSHING SUCCESS

Rewards those who take hold of our new line of work; you can live at home and attend to it. All ages, both sexes. You are started free. No special ability or training required. All is easy and any one can properly do the work. $1 per hour and upwards easily earned. A royal opportunity for rapid and honorable money making. Write and see. All will be put before you free, and should you then conclude not to go to work, why, no harm is done. Address Stinson & Co., Portland, Maine.

EXTRACT OF PINUS CANADENSIS.

John Adderley, M.D., Skibbereen, County Cork, Ireland, says: It gives me great pleasure to add my testimony to the great value of S. H. Kennedy's Extract of Pinus Canadensis, which I consider a most valuable uterine styptic, seeming not only to possess the power of arresting uterine hemorrhage, but also to produce a healthy action of the parts. I used it with a patient who had been suffering for a number of years from menorrhagia, depending upon ulceration of the os and cervix uteri, with whom I had tried all other remedies for menorrhagia, lasting during a period of five months, almost without intermission. Extract of Pinus Canadensis applied to the os uteri on cotton wool, and also used as a lotion, arrested the hemorrhage immediately, and the Aletris Cordial, which was taken internally, helped to invigorate the system and promote a cure, which I had at one time considered incurable. I should not wish to be without these remedies in similar cases, and shall continue the use of them in my practice, as I consider they gave most satisfactory results.

Quill Toothpicks.—A manufactory of quill toothpicks was formerly a quill-pen factory at Paris, and is now devoted to the manufacture of quill toothpicks, and turns out twenty millions yearly.

To Clean a Brass-faced Clock.—Powder fine some bichromate of potash; then carefully mix with it in a mortar twice its bulk of sulphuric acid; then mix with this an equal quantity of rain water. Remove the clock face, and apply some of this on a clean soft rag, when the stains, and the cloudiness will at once be removed; wash immediately in plenty of water (swill under the tap), and wipe perfectly dry. Then polish with sifted rottenstone, warm before the fire, and give a coating of pale lacquer. A damp chamois-leather only is required to clean it afterwards.

Horsford's
ACID PHOSPHATE.

Prepared according to the directions of Prof. E. N. HORSFORD.

ESPECIALLY RECOMMENDED FOR

Dyspepsia, Nervousness, EXHAUSTION, Headache, Tired Brain

And all Diseases arising from Indigestion and Nerve Exhaustion.

This is not a compounded "patent medicine," but a preparation of the phosphates and phosphoric acid in the form required by the system.

It aids digestion without injury, and is a beneficial food and tonic for the brain and nerves.

It makes a delicious drink with water and sugar only, and agrees with such stimulants as are necessary to take.

Dr. E. W. Hill, Glens Falls, N. Y., says: "An excellent remedy for atonic dyspepsia, nervous and general debility, or any low state of the system."

Dr. D. A. Stewart, Winona, Minn., says: "Entire satisfaction in cases of perverted digestion, loss of nerve power, mal-nutrition, and kindred ailments."

Dr. G. H. Leach, Cairo, Ill., says: "Of great power in dyspepsia and nervous prostration."

Descriptive pamphlet free.

RUMFORD CHEMICAL WORKS, PROVIDENCE, R. I.

BEWARE OF SUBSTITUTES AND IMITATIONS.

$10 REAL VALUE FREE!



Our new stamping outfit is **free** to every reader of this publication; it contains **100** perforated stamping patterns and includes a great variety of all sizes that are wanted. This outfit is a real work of art; no stamping outfit has ever been offered heretofore, on which anything like so much artistic ability was brought to bear. With each outfit is A BOX OF BEST STAMPING POWDER, PAD, AND BOOK of INSTRUCTIONS, giving full directions for stamping, tells how to make the **powder** and stamping **paint,** contains instructions for **Lustre, Kensington** and **Hand painting,** tells colors to use in painting—red, white, blue, yellow, pink and other flowers; also contains hints and instructions on other matters, too numerous to mention. Bought singly, or a few patterns at a time, at usual prices, the equal of the above would cost **$10.** Although it is **free,** yet this is the **Regal Queen of Stamping Outfits** and on every hand is acknowledged to be superior, yes, very much superior, and very much more desirable than those which have been selling for **$1** each and upwards. By having **200,000** of these outfits made for us, during the dull season, we get them at first cost; the manufacturer was glad to take the order, at cost, that his help might be kept at work. All may depend that it is the very best, most artistic and in every way desirable outfit ever put before the public. Farm and Housekeeper (monthly, 16 large pages, 64 long columns, regular price 75 cents a year) is generally acknowledged to be the best general agricultural, housekeeping and family journal in America; it is entertaining and of greatest interest, as well as useful; its contributors embrace the widest range of brilliant talent. Furthermore, we have lately become managing owners of that grand monthly, **Sunshine, for youth; also, for those of all ages whose hearts are not withered;** 16 large pages, 64 long columns, regular price 75 cents a year. Sunshine is known favorably as the best youth's monthly in America. The best writers for youth, in the world, are its regular contributors; it is now quoted all over the world as standing at the head. Both papers are splendidly illustrated by the best artists. We will take 200,000 **trial year** subscribers at a price which gives us but a moderate portion of the **cost.**

FREE! Furthermore, every trial year subscriber, for either of the papers will receive **free** by mail our new **100** pattern Stamping Outfit. Trial year subscriptions will be received for either of the papers as follows: **1** subscription and **1** outfit, **32** cents; **2** subscriptions and **2** outfits, if sent at one time, **55** cents; **4** subscriptions and **4** outfits, if sent at one time, **$1.** For $1 send a dollar bill, but for less, send **1-cent** postage stamps. Better at once get three friends to join you, at 25 cents each; you can do it in a few minutes and they will thank you; papers will be mailed regularly to their separate addresses. While **trial year** subscribers are served for much **less than cost,** it proves the rule that a very large proportion of all who read either paper for a year, want it thereafter, and are willing to pay the regular price of 75 cents a year; through this, as time rolls on, we reap a profit that satisfies us.

FREE! The trial year subscriptions are almost **free,** and this the **Regal Queen of Stamping Outfits**—the best ever known—is entirely **free.** It is the greatest and best offer ever made to the public. **Large sizes** of patterns—every size that can be desired is included; all other outfits surpassed, by this, the best, the most artistic, the **Regal Queen.** Below we give a list of a few of the patterns; space is too valuable to admit of naming all: 1 Poppies for Scarf, 7 1-2 inch; 2 Tidy design, 7 1-2 inch; 3 Splendid Tinsel design, 8 inch; 4 Golden Rod, 4 inch; 5 Pond Lilies; 6 Pansies; 7 Moss Rose Buds; 8 Tube Roses; 9 Wheat; 10 Oak Leaves; 11 Maiden Hair Ferns; 12 Boy; 13 Girl's Head; 14 Bird; 15 Strawberries; 16 Owl; 17 Dog; 18 Butterfly; 19 Apple Blossoms; 20 Calla Lily; 21 Anchor; 22 Morning Glories; 23 Japanese Lilies; 24 Rabbit; 25 Bunch Forget-me-nots; 26 Fuchsias; 27 Bell Drops; 28 Fan; 29 Clown's Head; 30 Cat's Head. **70** other splendid patterns are included in this **Regal Queen** of stamping outfits—in all **100** patterns. Safe delivery guaranteed. Possessing this outfit any lady can, without expense, make home beautiful in many ways, can embroider childrens' and ladies' clothing in the most charming manner, and readily **make money** by doing stamping, Lustre, Kensington and Hand painting for others. A good stamping outfit is indispensable to every woman who cares to make home beautiful. This outfit contains patterns for each and every branch of needle work, flower painting, etc., and the **Book of Instructions** makes all clear and really easy. This outfit will do more for HOME and LADIES than many times the amount of a trial year subscription spent otherwise; no home should be with out it. The beautiful designs of this REGAL QUEEN of outfits ARE ALL THE RAGE wherever seen; when ever one or two reach a locality their fame spreads, and many TRIAL YEAR subscriptions usually follow. Many who have paid from **$1** to **$2** for outfits and were satisfied until they saw our designs, have secured our outfit and laid aside forever the others. Those who subscribe will find the papers well worth several times the trifling cost of a trial year subscription, and the majority will make up to us the loss, that this year we incur, through such a low price, by continuing subscribers, year after year, at the regular price, which all will be willing to admit is low enough. The money will gladly be refunded to any one who is not fully satisfied. Address, GEORGE STINSON & CO., BOX 356 Portland, Maine.

UNCOVERED.

We will print your name and address in American Agents' Directory, for only **12** cents in postage stamps; you will then receive great numbers of pictures, cards, catalogues, books, sample works of art, circulars, magazines, papers, general samples, etc., etc., UNCOVERING to you the great broad field of the great employment and agency business. Those whose names are in this Directory often receive that which if purchased, would cost $20 or $30 cash. Thousands of men and women make large sums of money in the agency business. Tens of millions of dollars worth of goods are yearly sold through agents. This Directory is sought and used by the leading publishers, booksellers, novelty dealers, inventors and manufacturers of the United States and Europe. It is regarded as the standard Agents' Directory of the world and is relied upon: a harvest awaits all whose names appear in it. Those whose names are in it will keep posted on all the new money making things that come out, while literature will flow to them in a steady stream. The great bargains of the most reliable firms will be put before all. Agents make money in their own localities. Agents make money traveling all around. Some agents make over ten thousand dollars a year. All depends on what the agent has to sell. Few there are who know all about the business of those who employ agents: those who have this information make big money easily; those whose names are in this Directory get this information FREE and complete. This Directory is used by all first-class firms, all over the world, who employ agents. Over 1,000 such firms use it. Your name in this directory will bring you in great information and large value; thousands will through it be led to profitable work, and FORTUNE. Reader, the very best small investment you can make, is to have your name and address printed in this directory.

Address, AMERICAN AGENTS' DIRECTORY, Augusta, Maine.

A RICH PRESENT FOR YOU!

We have purchased for one-fourth the original actual cost, a large quantity of elegant Papeteries, each one filled with the very choicest quality of **Fashionable Linen Note Paper and Envelopes,** in beautiful assorted tints, with pens, penholder, sealing wax, etc., to match. The regular retail price of some of these Papeteries is $3.00, others are worth $1.50 to $2.50 each, while the cheapest one has never been sold at less than 40 cents, and a great bargain at that price. They are all very handsome and really valuable. We shall, for the next two months, send one of these Papeteries, carefully packed and fully post-paid, to every one who sends us **ONLY ONE DOLLAR** to pay for a full year's subscription to **DRAKE'S MAGAZINE.** The best Papeteries will be sent to those who subscribe first, and it will be **"First come best served."** All subscriptions will begin with the latest number out. **DRAKE'S MAGAZINE** is 64 pages and handsomely bound, each number is complete in itself, and has from 15 to 25 handsome illustrations. It has special departments to interest ladies and children, and entertaining matter for everyone. Every article in it is written expressly for it by the best authors. No other magazine of equal value is sold at less than 20 cents per copy, or $2.00 per year, yet we will send you **DRAKE'S MAGAZINE** a whole year and a **BEAUTIFUL PAPETERIE** filled with fashionable Stationery, all for **One Dollar.** A one dollar bill will go safely in the mails. Cut this advertisement out. It may not appear again. Address, **DRAKE'S MAGAZINE,**

31 Mercantile Exchange, New York City.

$93 Sewing Machine Free!

We want one person in every village, town and township, to keep in their homes a line of our ART SAMPLES; to those who will keep and simply show these samples to those who call, we will send, free, the very best Sewing Machine manufactured in the world, with all the attachments. This machine is made after the SINGER patents, which have expired. Before the patents run out, this style machine, with the attachments, was sold for $33; it now sells for $50. Reader, it may seem to you the most WONDERFUL THING ON EARTH, but you can secure one of these machines ABSOLUTELY FREE, provided your application comes in first, from your locality, and if you will keep in your home and show to those who call, a set of our elegant and unequaled art samples. We do not ask you to show these samples for more than two months, and then they become your own property. The art samples are sent to you ABSOLUTELY FREE of cost. How can we do all this?—easily enough! We often get as much as $2,000 or $3,000 in trade from even a small place, after our art samples have remained where they could be seen for a month or two. We need one person in each locality, all over the country, and take this means of securing them at once. Those who write to us at once, will secure, FREE, the very best Sewing Machine manufactured, and the finest general assortment of works of high art ever shown together in America. All particulars FREE by return mail. Write at once; a postal card on which to write to us will cost you but one cent, and after you know all, should you conclude to go no further, why no harm is done. Wonderful as it seems, you need no capital—all is free.

Address at once, TRUE & CO., AUGUSTA, MAINE.

N. K. FAIRBANK & CO'S

FAIRY SOAP.

A PERFECTLY PURE WHITE FLOATING SOAP.

DESIGNED EXPRESSLY TO USE IN TOILET, BATH AND NURSERY.

Admirably adapted to every requirement of the Household.

DAINTY AND DELICATE FOR ALL WASHING PURPOSES

For sale by all First-class Grocers and Druggists.

N. K. FAIRBANK & CO.,

CHICAGO, ST. LOUIS, NEW YORK, OMAHA.

Good Agents

To obtain Subscriptions for

AMERICAN ✳ ANALYST

WANTED ON LIBERAL TERMS.

ESTABLISHED 1872.

GELATINE.

JAMES CHALMER'S SON'S

Transparent Gelatine.

PURITY—STRENGTH.

Best for Family Use.
Jellies, Blanc Mange, Etc.

ACKNOWLEDGED BY EVERY ONE EQUAL TO THE BEST.

All Postmasters will receive subscriptions for the **AMERICAN ANALYST.**

OUR SPECIALTIES ARE

Choice Bottled Ciders

—AND—

Pure Cider Vinegar,

For Hotel and First-Class Trade.

T. P. ROGERS & SON,

370 to 376 Washington Street,

NEW YORK.

TORSION BRAIDED WIRE MATTRESSES

✳ AND PILLOWS. ✳

THE BRAIDED WIRE MATTRESS

complete in itself, requiring no hair or other mattress or spiral springs or woven bed bottom.

It cannot absorb odors, become musty or retain perspiration or disease germs, the covering being so arranged that it can be removed and washed.

It is as soft and fresh as feathers or any other material, and cannot become heated, as each slight movement changes the air beneath, while the temperature can be regulated by placing over it any desired amount of covering.

As a luxury nothing can surpass it, especially in warm weather.

No material is used that will attract bugs, moths or other insects.

No dust can be collected and retained to puff out through the covers when bedding is shaken or beaten. To secure an absolutely comfortable, sweet and pure resting place for the body during nearly one-third of the natural life which is spent in bed, is one of the most important objects of thought and care, for upon healthful sleep depend all the successes and pleasures of our waking hours.

Send for Circular.

THE TORSION BRAIDED WIRE UPHOLSTERING CO.,

No. 1017 Chestnut Street.

PHILADELPHIA, PA.

Natural Lithia Water.

FARMVILLE LITHIA WATER

FROM VIRGINIA.

—Not only Relieves, but—

CURES

Bright's Disease, Kidney Troubles of all Kinds, Rheumatism, Rheumatic Gout, Dyspepsia, Bladder Troubles, Diabetes, Calculi, Albuminuria. Without Taste or Odor. An Unapproachable Record in Results.

Sold by HAZARD, HAZARD & Co., Fifth Avenue Hotel, and other first-class Pharmacists. Pamphlet free upon application.

FARMVILLE LITHIA SPRINGS CO.,

298 Broadway, New York, and Philadelphia.

Subscriptions $1 per year. Now is the time to subscribe.

J. HENRY HENTZ. J. P. ROBINETT. J. HENRY HENTZ, Jr.

ESTABLISHED 1793.

WHITE, HENTZ & CO.,

SOLE PROPRIETORS OF

Trimble and Pennsylvania Monogram Whiskies.

222 and 224 NORTH SECOND ST., PHILADELPHIA.

D. LIEBER, 17 South William St., New York. Col. H. A. SELIGSON, 1200 Pennsylvania Ave., Washington, D. C.

THE OLDEST.

THE GENUINE EAU DE BOTOT BOTOT WATER
THE ONLY DENTIFRICE APPROVED BY THE ACADEMY OF MEDICINE OF PARIS, FRANCE.



FOR MORE THAN A CENTURY IN GENERAL USE IN EUROPE.
SOLE AGENT FOR THE UNITED STATES, FREDERIC REISET, 44 BEAVER STREET, NEW YORK.

THE BEST.

SEND
YOUR WIFE
THE
American Analyst.
$1.00 A YEAR.

CALIFORNIA
Fine Table Wines
From our Celebrated Orleans Vineyard.
Arpad Haraszthy & Co
Producers of the
ECLIPSE
CHAMPAGNE,
530 Washington St.
SAN FRANCISCO.
PARK & TILFORD, New York, } Agents.
C. JEVNE & CO., - - Chicago, }



BATES' WAIST

Mrs. E. M. VAN BRUNT,
DRESS REFORM PARLORS,
39 East 19th St., N. Y. City.

Hygienic and Artistic Underwear for Men, Women and Children.

FALL AND WINTER

Jersey-fitting Undergarments in Silk, Jaeger Wool, and Merino. In stock or made to order.
Good-Sense Waists for all ages. Breakfast Corsets, Dr. Warner's Health Corset, Jackson Waist, Mme. Clark Corset, Corset for Thin Women, Skirt and Stocking Supporters, Abdominal Bandages, Double V Waists, Sanitary Towels, Bustles, Dress Reform Waists, Comfort Waist Corsets of all brands. Send for *Dress Reform Quarterly*, mailed free. Dress Reform Patterns. Orders by mail a specialty.



ESTABLISHED 1857.

J. H. CUTTER,

OLD

BOURBON AND RYE WHISKIES.

We are the Sole Owners and Proprietors of this Celebrated Brand of Whiskey.

C.P.MOORMAN & CO. LOUISVILLE, KY.

We Guarantee the Superior Quality and Absolute Purity of every Barrel of Whiskey sold by us under this Brand.

W. P. FESSENDEN, Agent for N. E. States, Maryland and Penn., 11 Central St., Boston.

A BUSINESS BENEFIT.

ADVANTAGES TO ADVERTISERS OFFERED BY THE AMERICAN ANALYST.

It has not the limitations of a daily paper. No one reads yesterday's paper. A monthly lives at least a month, while a semi-monthly is fresh twice a month, and its audience is not limited by geographical lines, but the circulation is all over the United States and Canada.

It contains matters of interest to everyone, especially the ladies of the household, and is, therefore, sure of a careful perusal. Our audiences are intelligent and of the better classes, who have money to spend, and any well worded advertisement in our columns, giving real information, will receive a careful perusal.

Our rates are as low as our circulation affords. Large circulation and original matter cost money, and those advertisers who desire to realize these benefits must expect to pay reasonably for them.

Advertisements in our columns are permanent. Most of our subscribers bind their numbers.

Our advertisements are set up in an attractive form, sure to call the attention of the reader.

Anything that our readers want, or for which a demand is to be created, not wholly of a local nature, will pay to advertise with us.

We take only advertisements from legitimate houses of really meritorious goods, and give them all the editorial assistance they deserve; consequently our readers knowing this, have confidence in advertisements contained in our columns.

The fact that we have the best and largest houses in every branch of trade advertising with us, and that they always renew as their seasons arrive, proves beyond a doubt that they have found the AMERICAN ANALYST a good advertising medium. Why should not you?

Any Book published can be procured upon application to

THE AMERICAN ANALYST,
19 Park Place, N. Y.

"ROYAL" SALAD DRESSING,
PURE AND WHOLESOME.
Always Fresh, does not turn Oily or Rancid.
'ROYAL" WORCESTERSHIRE SAUCE,
The Peer of American Manufacture.

PURITY. TRADE MARK EXCELLENCE.

"CROWN" CELERY SPICES, TOMATO CATSUPS.
Pure Flavoring Extracts, Etc.

HORTON, CATO & CO.,
SOLE PROPRIETORS & MANUFACTURERS,
DETROIT, MICH.

"BILLET"

are

Carefully Selected French Sardines, Packed in Choicest Olive Oil.

AT ALL LEADING GROCERS.

Any Retail Druggist in the United States who desires to obtain Advertising Matter, Show Cards, Signs, etc., which will assist and instruct him in the sale of Harriet Hubbard Ayer's Recamier Toilet Preparations and Vita Nuova, should address THE RECAMIER MFG. CO., 52 and 54 Park Place, New York City.

Subscriptions $1 per year. Now is the time to subscribe.

UNEQUALLED Ask your Grocer for, and insist on having, LEA & PERRINS' Sauce, "The Worcestershire." It is known throughout the whole civilized world as the Best and most Delicious Sauce. DELICIOUS.

SCOTCH MARMALADE, Jams, Fruit and Wine, Jellies, &c.
By James Keiller & Son, Dundee.
SCOTCH BISCUITS, Albert, Water, and Oat Cake,
By Robert Middlemass & Son, Edinburgh.
RACAHOUT des Arabes, by De Langrenier, Paris.
BAY WATER, West India, (J. D. S. brand), in cases, one dozen bottles.
Sold by all first-class Grocers.
JOHN DUNCANS' SONS, 43 Park Place, New York. Agents for the United States.

WE solicit an investigation of our system and methods, and will gladly send to any one very interesting matter on the OPIUM HABIT, DRUNKENNESS and their effects and cure. Physicians specially invited to examine, and if desirous of trying our remedies, liberal arrangements will be made with them. Prompt and frank attention to correspondence. The remedies are put up safely in stout boxes and sent masked. Full directions sent.
THE LESLIE E. KEELEY CO., Dwight, Illinois.

GOLD You can live at home and make more money at work for us than at anything else in the world. Either sex; all ages. Costly outfit FREE. Terms FREE. Address, TRUE & CO., Augusta, Maine.

ALTHENE SKIN SOAP

An absolutely pure and perfect soap for all purposes of the toilet, nursery, bath or sick-room. Has the approval of leading chemists and physicians, and is recommended by all who have used it. Price 25 cts. a cake, or 65 cts. for a box of three. Can be obtained of the retail druggists or from

J. W. CAMPION & CO., 916 Filbert Street,
PHILADELPHIA.



These Goods are "Par Excellence,"
Pure, Healthful and Reliable, warranted to give satisfaction in every particular.
For sale by wholesale and retail grocers throughout the United States. VOUWIE BROS., Manufacturers, CLEVELAND and CHICAGO.

Robert Gordon's
TRADE MARK.
SPICED SEA FOODS
(IN GLASS.)
OYSTERS, LITTLE NECK CLAMS, MUSSELL, SHRIMP, LOBSTER, Etc.,
Packed in 8 and 16 oz. Jars. Guaranteed to be strictly Pure.
MADE OF THE FINEST MATERIALS.
—ALSO,—
ROBERT GORDON'S CONDENSED CLAM CHOWDER,
In 3-lb Cans. Cheapest and Best in the Market.
MANUFACTURED BY
JONES, GORDON COMPANY, Limited,
204 West Street, New York.

"HUNTER'S INVISIBLE"
MEDICATED FACE POWDER.
An Exquisitely Delicate Preparation
For Beautifying the Complexion.
DELIGHTFULLY FRAGRANT. PERFECTLY HARMLESS.
Flesh, Pearl, Blonde and Brunette Tints.
The Closest Scrutiny Fails to Detect its Use!
25 CENTS EVERYWHERE. BEWARE OF IMITATIONS.

ESTERBROOK'S STEEL PENS
Leading Numbers 14,048,128 130, 135, 333, 161.


—For sale by all stationers.—
THE ESTERBROOK STEEL PEN CO., 26 John St., N. Y.
Works CAMDEN, N. J.

FAT CORPUS LEAN *will reduce fat at the rate of 10 to 15lbs. per month without affecting the general health. 6c. in stamps for circulars covering testimonials.* S. E. MARSH CO., 2315 *Madison Sq., Philadelphia, Pa.*
MADE ABSOLUTELY HARMLESS *simply stopping the FAT-producing effects of food. The supply being stopped the natural working of the system draws on the fat and at once reduces weight.* LEAN

Good Subscription Agents wanted by AMERICAN ANALYST.

NATRONA BI-CARBONATE OF SODA.

(ABSOLUTELY PURE.)



The nature of the raw material from which NATRONA BI-CARBONATE OF SODA is made—viz., kryolith, a mineral containing *pure sodium*—insures a purity and uniformity of product which cannot be obtained from any other known material. In making BI-CARB. SODA from any other raw material, the use of sulphuric acid is a necessity, but none is used in any part of the process of making NATRONA BI-CARB.; hence its entire freedom from the slightest trace of arsenic, which is always present in ordinary soda. Its absolute purity and entire freedom from all traces of *sulphate of soda*, common salt and other impurities, render NATRONA BI-CARB. NEARLY TASTELESS, and being bolted through the finest bolting-cloth, insures the finest stage of division.

To these indisputable facts the attention of CONSUMERS of soda is specially called. They are IMPORTANT, and should influence both those who use and those who sell soda, to buy and sell NONE BUT THE BEST.

The NATRONA BI-CARB. Soda is kept in stock by almost every wholesale druggist and grocer throughout the United States, of whom it may be ordered.

Natrona Bi-Carb. Soda is unequaled by any other brand of English or American Manufacture.

PENNA. SALT MANUFACTURING CO.,

NATRONA CHEMICAL WORKS. PHILADELPHIA, PA.

CARNRICK'S SOLUBLE FOOD

FOR INFANTS AND CHILDREN.

For Mothers, Invalids, Dyspeptics & Aged People.



THE ONLY FOOD *that digests as easily as human milk, and agrees with all infants and children.*

THE ONLY FOOD *that thoroughly nourishes the child without the addition of cow's milk.*

THE ONLY FOOD *that removes from infancy all necessity, danger and annoyance of a wet nurse.*

TAKEN BY MOTHERS *once or twice a day the quantity of milk will be increased and quality at once improved.*

IF THE CHILD IS RESTLESS, *change partially from nursing to* **SOLUBLE FOOD.**

DR. STUTZER, Food Analyst for Rhenish Prussia, says: "CARNRICK'S SOLUBLE FOOD is the best of all the foods I have ever examined."

"OUR BABY'S FIRST AND SECOND YEARS," by Marion Harland. Book of 64 pages, giving careful instructions for bringing up the little ones. Sent free by **REED & CARNRICK, N. Y.**



BLAIR'S PILLS

Great English Remedy for Gout, Rheumatism and Kidney Complaints.

Sure, Prompt and Effective. Oval box 34, round box 14 pills. At all druggists, and 224 William St., New York.



GOLD MEDAL, PARIS, 1878

BAKER'S

Breakfast Cocoa.

Warranted *absolutely pure Cocoa,* from which the excess of Oil has been removed. It has *three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup.* It is delicious, nourishing, strengthening, easily digested, and admirably adapted for invalids as well as for persons in health.

Sold by Grocers everywhere.

W. BAKER & CO., Dorchester, Mass.

Sura Cura

ROBINSON'S SURE CURE FOR

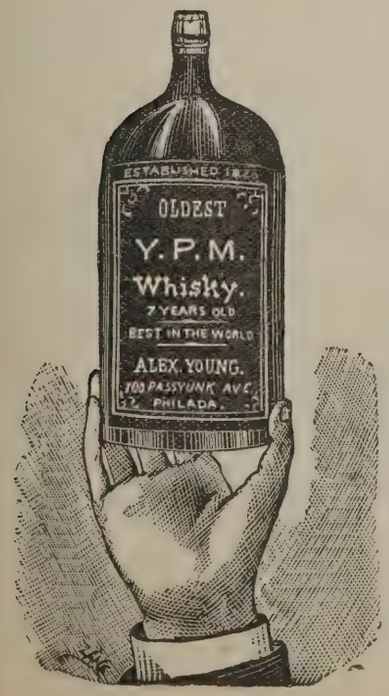
RHEUMATISM

And NEURALGIA,

And remedy for diseases arising from an impure state of the blood. An antidote for **MALARIA.** Price 50 c. and $1. Sent by mail on receipt of price. Send for Circular.

R. W. ROBINSON & SON,
184 Greenwich Street,
NEW YORK.

Sura Cura



ESTABLISHED 1823.

ALEX. YOUNG CO., Limited

DISTILLERS OF

Y. P. M. WHISKIES

DISTILLERY,

Nos. 408, 410, 412 and 414 South Street,

MALT HOUSE,

416, 418, 420, 422 and 424 South Street,

STORE,

No. 700 Passyunk Avenue.

PHILADELPHIA, PA.

ARMOUR & CO.

CHICAGO, ILLS.

PACKERS OF

Pork and Beef Products

CANNED MEATS,

ETC.,

FOR HOME CONSUMPTION AND FOR EXPORT

TO ALL PARTS OF THE WORLD.

Also,

SHIPPERS OF

Choice Dressed Beef,

MUTTON AND HOGS,

In Refrigerator Cars,

To BOSTON,
NEW YORK,
PHILADELPHIA,
BALTIMORE,

And other cities throughout the country.

GILBERT S. GRAVES

STANDARD

STARCH.

MANUFACTURED WITH ENTIRELY NEW MACHINERY AND BY LATEST IMPROVED PROCESS.

IT IS GUARANTEED to be fully equal to BRANDS SOLD AT FANCY PRICES, and MUCH SUPERIOR TO STARCH SOLD AT EQUAL PRICES.

THE MIRROR GLOSS

Is the finest Starch made for the Laundry, and cannot be excelled. It will not injure the finest Laces.

THE CORN STARCH

For culinary purposes is prepared with the greatest care, from selected Corn, and is a most delicious and wholesome article of food.

ASK YOUR GROCER FOR IT.

A DOSE OR TWO

WILL QUICKLY CURE

NERVOUS HEADACHE.



A Cure for Sick Headache.

A CURE FOR

SLEEPLESSNESS.

A CURE FOR

SEA-SICKNESS.

The "Best" Tonic

A Concentrated Liquid Extract

OF

MALT AND HOPS.

Invigorating

and

Nutritious.



INSURES

A

Healthy Appetite

—AND—

AIDS DIGESTION.

STRENGTHENS THE SYSTEM.

One of the Most Efficacious Remedies for Dyspepsia.

INDISPENSABLE FOR NURSING MOTHERS. THE MOST WHOLESOME TABLE BEVERAGE.

The "BEST" Tonic is manufactured from the Best Malt and Choicest Hops and neither Alcohol, Spirits nor Chemicals of any kind are used in its preparation.

MANUFACTURED ONLY BY

Specialty Department, **PHILLIP BEST BREWING CO.,**

Eastern Depot, 28 College Place, N. Y.

General Office, - - - - MILWAUKEE, WIS.

SWIFT'S

Choice Chicago Dressed Beef

—AND—

MUTTON.

CAN be found at all times in full supply and at popular prices at the branch houses in all the larger cities and is ***retailed by all first class butchers.***

The trade of all marketmen and meat dealers is solicited for our Wholesale Branch Houses, and the ***public may rest assured*** *that in* ***purchasing our meat*** *from dealers they will* ***always receive the best.***

SWIFT AND COMPANY,

UNION STOCK YARDS,

CHICAGO, ILLS.

Tabasco Pepper Sauce

OR LIQUID PEPPER.

Is simply the Pulp of the Ripe Pepper Extracted by Pressure.

The seed of this Pepper was obtained from Central America, and by careful cultivation in Louisiana for many years has been so improved in strength, flavor and aroma, as to have become a new variety of Red Pepper, superior to all others. The pulp is so handled as to retain all the flavor, strength, aroma and color of the ripe fruit, and to keep unimpaired in any climate. It excites the appetite, promotes digestion, and is pronounced, by connoisseurs, to be the finest condiment in the world. For medicinal purposes it recommends itself by its purity, strength and diffusible form.

Manufactured by E. McILHENNY,

NEW IBERIA, LA.

For Sale by all Wholesale Grocers.

ON THE USE OF PURGATIVES.

BY CHARLES A. HOFF, M. D., ST. LOUIS, MO.

Of all preparations contained within the *pharnacopœia,* there are none, apparently, held in higher esteem by mankind than that class of medicines, commonly known as purgatives. The busy practitioner confidently prescribes them with variable frequency, singly and combined, from the date of the writing of his very first prescription to that of his last; and the corner druggist rarely sees a day pass over his head on which he does not greet the customer who has called around to get "something to act upon his bowels." Indeed, the inevitable purgative awaits the tiny baby screaming in its first attack of colic; it is resorted to by the invalid weighted down with years of suffering and disease; and it is by no means despised by the individual in robust health, when assailed by the various petty ills, which even the most vigorous seldom entirely escape.

Notwithstanding the fact that purgatives are so generally prescribed by the physician, and so frequently resorted to without advice by the patient, they are not altogether incapable of doing harm. As everybody knows, the habit of purging the system repeatedly with salines, cholagogues, hydragogues, or drastics, is a most pernicious one; and the physician who fails to exercise a proper care, both in the selection and the administration of cathartics will sooner or later bankrupt the health of his patients as well as his own hard earned reputation.

Constipation is a complication of so many disorders, a symptom of so many diseases that its treatment in different cases depends upon very different considerations. For a simple, ordinary attack, the average doctor has been accustomed to use a simple purge, such as castor oil, sulphate of magnesia, rhubarb, senna, aloes, colocynth, blue pills, etc.; yet in none of these, can it be truly said, has there been found all that could be wished for, even in so simple a matter as a laxative. Where can we find the physician who has not been vexed and annoyed at the complaints of his patients against the purgative medicines he has been accustomed to prescribe. Some people there are who can not or will not swallow pills; many object to the nauseating castor oil; not a few oppose the use of salines since they are disagreeable both in taste and effect; many look upon all resinous cathartics as objectionable on account of their so called heating properties; aloes is objected to in pills and especially in pregnancy; elaterium is said to be excessively harsh and severe, croton oil is known to be dangerous; podophyllin causes an undue amount of griping; blue mass is avoided on general principles; and so on to the end of the chapter.

Fortunately, however, the physician of the present need no longer be placed in a dilemma when called upon to prescribe a preparation free from the faults enumerated in connection with ordinary purgatives. The pharmacist has bravely come to his aid with a formula of incomparable excellence; and this preparation, a combination of "manna, purified cathartic acid and fruit juice," although but recently brought to the notice of the medical world, is, nevertheless, already regarded as a most valuable addition to the resources of medicine.

The happy thought that suggested the combination known as the Rio Chemical Co.'s Acid Mannate justly challenges unlimited admiration and esteem, and has thus far evoked from the profession an almost universal verdict of commendation and praise. Prompt, mild and certain in its action, Acid Mannate may well be considered an ideal remedy in the constipation of pregnancy. Being pleasant to the taste, and continuing its good work without increased dosage, it is pre-eminently adapted to cases of habitual constipation. Indeed, in its wide range of adaptability as an aperient medicine it is impossible to exaggerate its importance, or allude either directly or indirectly to the vast variety of its beneficial, therapeutical properties.

The importance of laxatives is probably nowhere appreciated so much as in the constipation of pregnancy; and it is to this fact, no doubt, more than to any other, that Acid Mannate owes its great popularity and fame among remedial agents. The testimony of thousands of honorable medical gentlemen leading us to believe that, through the beneficent effect of this same elegant formula, constipation need not hereafter, as in the past, be regarded as one of the most troublesome attendants upon gestation. Moreover, the atrocious female pill of unknown composition but of dire effect, which has deluged the drug market for ages, we may consider as having had its day; and it is to be hoped that, since the physician is now in possession of a purgative especially suited to the period of gestation, female life will be less frequently harassed by the ails and aches said to be peculiar to the sex; and that miscarriages, displacements, granular erosions, congestions, headaches, dyspeptic and hypochondriacal attacks, and the whole long train of aches, pains and nervous ills will grow less familiar to the medical profession in the same ratio that the physician increases his familiarity with the actions of Acid Mannate.

A full sized bottle of Acid Mannate will be sent free to any Physician who desires to test it, if he will pay the express charges and mention this Journal, on application to the

RIO CHEMICAL CO.,
St. Louis, Mo.

GORDON & DILWORTH

MANUFACTURING PURVEYORS

Established 1847

ALIMENTARY PRODUCTS

ALL OF OUR PRODUCTIONS BEAR THIS TRADE MARK

WE WILL PROSECUTE ALL INFRINGEMENTS & IMITATIONS







CHOICE DESSERTS

OVER 100 DOMESTIC & FOREIGN FRUITS AND VEGETABLES TRANSMUTED INTO TABLE DELICACIES

PRICES ON PRESERVED FRUITS REDUCED 1ST DEC. 1885

PRESERVED, CANNED & BRANDY FRUITS, FRUIT JELLIES, VEGETABLES, TOMATO CATSUP, SYRUPS & JAMS, SALAD DRESSING, BLACKBERRY BRANDY, MINCE MEAT, PLUM PUDDING, SWEET PICKLES, OLIVES & CAPERS, WINE JELLIES, MARMALADE, SOUPS SAUCES &c.

SOLD BY THE LEADING GROCERS ON THE AMERICAN CONTINENT.

QUINA-LAROCHE

A STIMULATING, RESTORATIVE AND ANTI-FEBRILE

VINOUS ELIXIR

OF THE THREE CINCHONA BARKS.

A most powerful restorative in all cases where Cinchona is indicated,

As MALARIA, EXHAUSTION, SLOW CONVALESCENCE, GENERAL DEBILITY, Etc.

LAROCHE'S QUINA possesses in the highest degree the restorative and invigorating qualities of Cinchona, which is the best known medicine for giving tone to the digestive organs. It succeeds completely in removing LANGUOR, WEAKNESS, WASTING DISEASES, WANT OF APPETITE, and for FEVER AND AGUE IT IS ONE OF THE BEST SPECIFICS.

FOR SALE BY ALL DRUGGISTS.

E. FOUGERA & CO.,

PARIS, 22 RUE DROUOT. Sole Agents for the United States.

D. G. Cook, Pres.

AMERICAN WINE CO.,

ST. LOUIS.

COOK'S IMPERIAL

Press House and Wine Cellars, SANDUSKY, OHIO.



Office and Salesroom, Wine House and Vaults, 3015 TO 3021 CASS AVE.

Pure Still Wines.

GREENWAY'S PORTER

—AND—

DOUBLE AND EXTRA DOUBLE STOUT.

GREENWAY'S SALE INDIA PALE

IN GLASS OR WOOD.

ENGLISH TRADE MARK.

SEND FOR CIRCULARS.

FULLY EQUAL TO THE BEST IMPORTED. FOR FAMILY OR CLUB USE. RECOMMENDED BY OUR BEST PHYSICIANS FOR SALE BY ALL FIRST CLASS GROCERS AND DEALERS.

THE GREENWAY BREWING CO.
SYRACUSE, N.Y.

Greenway Bottling Co.,

BOTTLERS OF

GREENWAY BREWING CO'S BRANDS OF ALE, PORTER, DOUBLE STOUT

—AND—

Germania Brewing Co's Standard Pale Crown Lager & Culmbacher.

N. Y. Depot, 31 Broadway.

Established in London, 1831.

DEAN'S PATENT

ARDENTER MUSTARD.

BEST IN THE WORLD.

WARRANTED ABSOLUTELY PURE.



WARRANTED ABSOLUTELY PURE.

Ardenter Mustard Pellets

—FOR—

Dyspepsia and Indigestion.

UNIVERSALLY recommended and prescribed by physicians. The medicinal property are English mustard seed coated with pepsin and sugar. You will find it will relieve you after using two or three doses. It is very beneficial for Heartburn, Sour Stomach and Headache. They are a beautiful confection for children. Each bottle contains full directions.

W. G. DEAN & SON,

361 and 363 Washington Street, 84, 86 and 88 North Moore Street, New York.

—THE—

CHRISTIAN MOERLEIN

Brewing Co.,

CINCINNATI, U. S. A.,

Brewers of the far-famed

"NATIONAL" EXPORT

(The Queen of Beers)

LAGER.

Owing to its absolute purity, beautiful pale color, fine aroma and nutritious qualities, the above beer has become the PRIME FAVORITE in all the principal hotels and clubs, and in thousands of families throughout the West and South.

Pure LAGER BEER,

"IMPERIAL" and "CULMBACHER"

Brewed & Bottled SPECIALLY FOR HOTELS, CLUBS AND PRIVATE FAMILIES

—BY—

Beadleston & Woerz
291 W. 10th St. New York.

Orders by Postal Card promptly attended to.

H. CLAUSEN & SON

BREWING CO'S

CHAMPAGNE LAGER BEER,
ROYAL EXPORT LAGER,
EAST INDIA PALE ALE,
EXTRA AMERICAN STOUT.

Bottled for Family Use and Export by

PHŒNIX BOTTLING CO.

888 and 890 Second Avenue,

Bet. 47th and 48th Streets.

NEW YORK.

Order from your Grocer, or direct from us.

FULL WEIGHT
PURE
DR PRICE'S
CREAM
BAKING
POWDER
MOST PERFECT MADE

Its superior excellence proven in millions of homes for more than a quarter of a century. It is used by the United States Government. Endorsed by the heads of the Great Universities as the Strongest, Purest, and most Healthful. Dr. Price's Cream Baking Powder does not contain Ammonia, Lime or Alum. Sold only in cans.

PRICE BAKING POWDER CO.
NEW YORK. CHICAGO, ST. LOUIS.

MANUFACTURED BY THE

ST. LOUIS STAMPING CO.
PATENT
GRANITE IRON WARE
SOLD EVERYWHERE.

Corks
Francisco Lado & Co.
ESTABLISHED 1850
NEW YORK.

Subscriptions $1 per year. Now is the time to subscribe.

PEACOCK'S BROMIDES

(SYR: BROM: COMP: PEACOCK)

NERVE SEDATIVE.

Each fluid drachm represents 15 grains of the Combined C. P. Bromides of Potassium, Sodium, Calcium, Ammonium and Lithium.

USES:—EPILEPSY, and all CONGESTIVE, CONVULSIVE, and REFLEX NEUROSES.

This preparation has stood the test of time and experience, and can be relied upon to produce results, which can not be obtained from the use of commercial bromide substitutes.

DOSE:—One to two FLUID drachms, in WATER, three or more times a day.

PEACOCK CHEMICAL CO., St. Louis.

CARL L. JENSEN'S
CRYSTAL PEPSIN TABLETS



FOR DYSPEPSIA OR INDIGESTION.

CARL L. JENSEN'S CRYSTAL PEPSIN has been known throughout the world for the last ten years among the medical profession only. But a medical preparation of such high value as this could not be kept exclusively within the power of the physicians without permitting the public to become familiar with CARL L. JENSEN'S CRYSTAL PEPSIN, which they have so often seen mentioned in prescriptions from their physicians, and from which preparations they have received such gratifying results. That the public have availed themselves of this knowledge is manifested from the fact that the demand at the drug stores of late for CARL L. JENSEN'S CRYSTAL PEPSIN has become so urgent that we have been repeatedly requested by the Druggists at large to put up the PEPSIN in a more convenient form for their customers who demand JENSEN'S CRYSTAL PEPSIN without bringing a prescription. This PEPSIN, to suit the prescription department, is put up in loose Crystals or Scales, and therefore not in a suitable manner to be handled by the public. It is therefore, for the convenience of the public, prepared in tablet form, of which one or two constitute a dose, and put up in small bottles of convenient form to be carried in the pocket, each bottle containing seventy-five tablets.

CARL L. JENSEN,
SOLE MANUFACTURER,
2039 Green Street, Philadelphia, and 161 West 23d Street, New York.
KEPT BY ALL DRUGGISTS.

RUBY ROYAL "SEC."



This wine, of a bright crimson or Ruby color, possesses exceptional merit in all the characteristics of dryness, mellowness of flavor, and delicacy of fragrance. It is the only red champagne in the market, and can be tried at the Hoffman House, Delmonico's and other first-class places.

Sold by the Leading Grocers.

AGATE IRON WARE

Is the Purest, Cleanest, Most Durable, and altogether the Best Ware for family use ever made. It will not rust or break like ordinary Enamels, and is absolutely pure and safe to use, as certified to by the most eminent chemists here and abroad.



Two thousand different styles and sizes of Agate cooking utensils, for family use, are sold by all first-class dealers throughout the world, and giving universal satisfaction.

AGRICULTURAL
EXPERIMENT STATION

AMERICAN ANALYST

FOR THE

FAMILY AND CONSUMER.

A SEMI-MONTHLY ADVOCATE OF PURE FOOD AND THE SUPPRESSION OF ADULTERATION.

Office, 19 Park Place.

[Entered at the Post Office at New York, as Second Class Matter.]

VOL. IV.—NO. 10. NEW YORK, MAY 15, 1888. Whole No. 82

CONTENTS.

Answers to Correspondents 206
Chicago Analysts 209
Colored Pottery 210
Chamois Skins 210
Credulous Humanity 203
Domestic Dietetics 211
Editorial 206
Oleomargarine and Counter Legislation—Some Plain Facts about Crockery—Scotch Oats Essence—Moxie Nonsuited.
Faith Cure 210
Fingers and Table Etiquette 210
Helen's Escape—Chap. III 201
Medical Superstitions 203
Oleomargarine Defended 205
Olives, their Use 209
Persian Wine Making 207
Table Etiquette 210

HELEN'S ESCAPE.

IN FOUR CHAPTERS.

CHAPTER III.

Jack Corner's opinion about Monsieur Pontneuf naturally produced a vivid impression upon me; for the notion that my quiet, polite, refined professor could be the accomplice of men whose notions and acts were just at this time arousing the horror of the civilized world, had never entered my head. But when I came to think over it, the idea was not so ridiculous as it had at first appeared; for the position of Monsieur Pontneuf in my house was just such a one as would disarm suspicion, and he had innumerable opportunities of corresponding and plotting and arranging without the smallest chance of detection. Still, there was not sufficient reason for me to take any action in the matter, and certainly the scrap of conversation I had overheard in the summer house did not strike me as being of a particularly compromising nature. Indeed, the impression I gained therefrom was that Monsieur Pontneuf, so far from being "wanted" himself, was on the lookout for somebody else. But Jack Corner was not the sort of man to hint so grave a suspicion against any one without good reason, and I felt sure that he must have overheard or have learnt something which had warranted him in saying what he did to me.

As we were going to Paris the next day, and as Jack was about to start on what he called his "farewell bachelor jaunt," I had asked him to dine with us, and it occurred to me that Monsieur Pontneuf might join our party, although I knew that as a rule he kept aloof from all social entertainment. To my surprise, the professor gladly and readily accepted my invitation, and appeared at the appointed time, faultlessly arrayed, and looking as unlike the ideal assassin of czars and destroyer of public buildings as could be imagined.

During the dinner, Monsieur Pontneuf showed himself in quite new colors. All his reserve and shyness disappeared. He charmed my wife with his intelligent talk, and still more so by the masterly manner in which he operated on a pair of ducks. He laughed and chatted and joked, until it became hard to realize that he was identical with the "Dismal Froggy" of the villagers.

When the ladies had withdrawn, and a bottle of my choice Burgundy was placed on the table, he expanded still further, until I really regretted that during so long a period I had been without the society of so charming a companion. It was now for the first time that he learned that I had been in Paris during the siege and under the Commune, and the subject seemed to interest him very much, especially when I related the episode of Mr. Rayne's mysterious arrival and departure. I asked him what he thought about Mr. Rayne.

"It is plain enough what he was," replied the professor. "He was one of that rascally so-called Foreign Legion, enlisted from the scum of all the great cities of Europe—men who had nothing to lose and everything to gain, who hailed the supremacy of the Commune as an opportunity for enriching themselves at the expense of others; and to whom is due, quite as much as to my own countrymen, the shameful destruction of public buildings. He had probably been caught pillaging and had escaped to you."

Jack Corner spoke villainous French, but he could understand most of what was said.

"Is Monsieur a republican?" he asked.

I should state here that, before the professor had arrived, Jack had told me that he intended, if possible, to find out who and what our guest was, and I knew that with this simple question Jack was commencing his "pumping" process, especially as he pushed the bottle to the professor as often as he could, with the idea, no doubt, of loosening the professor's tongue.

"No, sir," replied Monsieur Pontneuf, with true refugee dignity. "I am a Bonapartist—one of a party almost as much detested in Paris just now as a Communard or a German, or I should not be teaching my native language in England."

I took no part in the conversation which ensued between the two men, a conversation which, under a social guise, reminded me very much of a passage of wit between a clever cross-examining counsel and an equally clever witness. Indeed, I was rather interested in the result, and in order that my presence should not act as a deterrent, I had another bottle brought on table, and after entreating my guests not to hurry themselves, left the room on the plea that I had a few domestic arrangements to see to. There was nothing unbecoming as a host in my doing this, for we never gave formal dinner parties, and I knew that Jack Corner's aunt was perfectly happy in the drawing room, talking local gossip with my wife, and listening to Helen's old English ballads at the piano.

My two guests, however, must have been vastly absorbed in their talk, for I had been a hour in the drawing room before Jack came in. I noticed that he was rather pale, and when he turned over the leaves of Helen's music, that his hand shook; so I took the first opportunity of asking him what had passed between him and the professor, and why the Frenchman had not come in.

"He's a mystery—that's all I can tell you. I havn't got much out of him, for he is far too wide awake, and he has gone off without a word."

"Gone off!" I exclaimed. "What do you mean, Jack? I hope you haven't offended him?"

"I hope not," replied Jack, smiling. "But I think he began to see the drift of my talk, and I don't think he liked it. However, I may be mistaken, and after all it is perhaps only his eccentricity."

Helen and Jack sang duets together, and Jack gave us a rollicking song of the sea, and then we sat down to a quiet rubber of whist, which occupied us until eleven o'clock, when Miss Corner, an old lady of the "smiler" type, pleased with everybody and everything, showed signs of fatigue.

I escorted them to the gate, and afterwards took a stroll alone in the moonlight. Of course the chief place in my thoughts was occupied by the professor, and I could not satisfactorily account for his sudden disappearance from my house, for, so far as I could judge from his usual behavior, he was the very last man to commit such a breach of good manners as to go away without a word of explanation or farewell. The result of a prolonged meditation, during which I had wandered almost as far as the summer house, was, that I felt convinced that Jack had been right, and that Monsieur Pontneuf was in reality a great deal more important a personage than he chose to be taken for, whatever the mystery that surrounded him might be. The distant boom of midnight from the church tower warned me that I had gone far enough, if I wished to have a good night's rest before my journey on the next day, and I was turning homewards, when a black patch on the light sandy soil attracted my attention. Stooping down and touching it, I found it stained my finger a dark color. I struck a light, and saw it was blood. I am not a very nervous man, but I must admit that the coming upon this appalling indication of a dark deed at such a lonely spt, at such a weird, still hour of the night, produced a feeling within me which was closely akin to terror. Then I noticed that there was blood farther on, patch after patch, as if some one had been wounded and dragged or had dragged himself along. I followed it until it stopped; but the trampled and torn appearance of the bushes on the stream side of the path showed me that some one had passed down towards the stream, which at this place forms a deep wide pool. Down I went in the bright moonlight, guided by the appearance of the bushes until, as I anticipated, all further traces were lost at the water's brink. I looked carefully about for some tell-tale relic of what had happened—a shred of cloth or an article of clothing—but there was nothing. I felt sure that something terrible had been enacted here, and instantly I associated Monsieur Pontneuf with it, although I scarcely dare think that Jack Corner was the victim.

I stood horror-struck for some moments, unable to collect my thoughts, irresolute as to how I should act; and the longer I stood the more firmly I became convinced that my suave, urbane professor was, as Jack Corner had suspected, a fiend in human shape—that Jack had spoken too freely of his suspicions, and had been made an example of the saying that "dead men tell no tales."

Then I strode off in the direction of the Cedars, Jack Corner's house, situated but a quarter of an hour's walk from my own, in a sequestered little dell near the London Road. It was approached through a lodge-gate which opened on to a winding road through dark fir trees; but Jack, who was of unostentatious habits, had dispensed with the services of a lodge keeper, although, as the London Road was lonely and much infested by tramps, the gates were securely fastened every night.

My surprise, therefore, may be imagined when I found the gates wide open, and my suspicions as to my poor friend's fate was thereby confirmed, for I knew that if Jack had returned home in the usual course he would have seen that his premises were closed for the night. With a courage which could only have been the fruit of despair, I almost ran up the gloomy, weirdly shadowed road to the house. It was dark and silent, and although I rang and hammered at the door for a quarter of an hour, I could get neither reply nor admittance.

Another horrible notion crossed my mind as I stood there in the stilly night, wondering what my next step should be. Suppose that, after having disposed of Jack Corner, the murderer, in order more effectually to secure his escape, had gone to the house had made away with Miss Corner and poor Gabrielle, and that a forced entrance into it would reveal their lifeless bodies.

Before, however, giving the alarm and procuring the assistance of the police, I determined to visit Pontneuf's lodging in the village, and I began to retrace my steps down the avenue. I stopped short after I had gone a little way, and for the first time I remembered Jack Corner's coachman, who was also man-of-all-work—reported to be the favored swain of Gabrielle—who slept over the stable, and who, although he was sufficiently far from the house to be unaware of anything that might occur there, might aid me in my investigation. Accordingly, I turned off to the stable, and here another surprise awaited me. The doors of the coach-house were wide open, and the little pony-trap, which I knew Jack had bought as a wedding present for my Helen, was not visible. I called out to the coachman above but could get no reply, so I lit a stable lantern, and, prepared for further horrors, ascended the stairs. The man's door was open and he was lying on his bed, so gagged with his own neckcloth that he could neither see nor speak, whilst his arms and legs were securely fastened with carriage straps; but I was relieved to find that at any rate he was alive, for upon my entering the room he moved. I quickly released him from his bonds, and stammering with excitement and fright, he told me that he had gone to bed as usual at ten o'clock and had fallen asleep, that he was violently awakened by feeling the neckcloth tied tightly over his face, that on attempting to rise he found that his legs had already been bound, and that, in spite of his struggles his arms were presently bound also. He could not tell me who had done it, but said that immediately afterwards he heard the pony put into the trap and driven off.

To my mind, therefore, it was clear that Pontneuf had escaped. However, with the coachman I went on to the cottage where the professor lodged, and after some difficulty succeeded in awaking the owner. "Is Monsieur Pontneuf in?" I asked.

"Yes, sir, I believe so," replied the man. "I've been abed since nine o'clock, so I couldn't say for sartin sure, but he generally is in at this time."

"Get a light and let us see," I said.

The man hesitated. Perhaps he thought I had been drinking, to make such a request, for every one knew that I had a small dinner party that evening and that the Frenchman had been one of the guests.

"Do you hear? Look sharp! It's a matter of life and death," I continued, and this brought him to his senses, for he presently appeared with a candle.

We went to the professor's room; the door was open but the room was empty, although the Frenchman's portmanteau was there. I opened it and within I found his dress clothes, crammed in evidently with haste, soaked with water, torn, and bedabbled with clay and blood.

The two men stood gaping wonderingly at the clothes, for of course they knew nothing of what I suspected, but to me the case was clear. Words must have passed between my poor friend and the professor upon the subject of socialism over that second bottle of wine. The Frenchman had gone out, had waylaid Jack, and after a desperate struggle had killed him and flung his body into the stream. Then he must have gone on to the Cedars, perhaps have made away with Miss Corner and Gabrielle, bound and gagged the coachman, and escaped in his victim's pony chaise.

So I impressed secrecy on the two men, but not with the faintest hope that they could keep such a *bonne bouche* of gossip to themselves, locked the door of the professor's room, and turned homewards, troubled in my mind not only how to take the immediate action which was necessary, but how to break the news to my wife and poor Helen.

ASK YOUR GROCER FOR IT. USE NO OTHER.

IMPEROYAL Wheat, Buckwheat and Cereals.



BEST IN THE MARKET.

IMPEROYAL VACUUM COOKED OATS, WHEAT AND HOMINY

AND

Griddle Cake Flour.

M. D. STEVENS' IMPEROYAL NEW PROCESS REFINED FLOURS.

Require but one minute in preparation, without **Salt, Baking Powder or Yeast.**

18 MERCANTILE EXCHANGE,

NEW YORK.

DIRECTIONS ON EACH PACKAGE.

Can be used for all kinds of Pastry, Bread, Biscuit, Griddle Cakes, etc., and its absolute freedom from Alum, Terra Alba, or any injurious ingredient, make it a necessity in every household. No lady can afford to be without it.

SOLD BY FIRST-CLASS GROCERS.

MELLIN'S

TRADE MARK

FOR INFANTS & INVALIDS

FOOD

The Only Perfect Substitute for Mother's Milk.

A Copy of our Book,

The Care and Feeding of Infants

will be MAILED FREE to any address.

DOLIBER, GOODALE & CO.,

40-41-42-43 Central Wharf, Boston, Mass.

NESTLÉ'S FOOD

NESTLÉ'S



MILK FOOD.

IS ESPECIALLY SUITABLE FOR INFANTS IN HOT WEATHER.

Requires No Milk in Its Preparation and is Very Effective in the Prevention of Cholera-Infantum.

"Ziemssen's Cyclopedia of the practice of Medicine," Vol. VII., the standard authority, says: **"In cases of Cholera-Infantum Nestle's Milk Food is alone to be recommended."** Because the gastro-intestinal disorders to which infants are so subject are provided for by presenting only the *nourishing* properties of cow's milk in a digestible form. "Cow's milk produces a coagulated mass of curd or cheese, which the immature gastric juice is **utterly unable to dispose of.**"

This is one of several reasons why infant foods requiring the addition of cow's milk fail as a diet in hot weather.

Pamphlet by Prof. Lebert and sample sent on application.

THOS. LEEMING & CO., Sole Agents, New York.

IMPORTANT

TO THE

MEDICAL PROFESSION:

Send your address to THE NEW YORK PHARMACEUTICAL COMPANY, BEDFORD SPRINGS, MASS., for Illustrative Hand-book, **FREE**, containing valuable formula, special directions, and the testimonials of one thousand physicians in favor of the great merits of

HAYDEN'S

Viburnum Compound,

IN FEMALE DISEASES.

Also, the

URIC SOLVENT,

For KIDNEY DISEASES, and complaints arising therefrom.

Then I thought of Miss Corner and Gabrielle; again turned back, called up the local constable, and with him proceeded to the house. We broke it open, we searched every nook and corner from attic to basement, but not a trace of either Miss Corner or of Gabrielle could we find, although their belongings were in their rooms. This completed the veil of mystery around the affair, and I felt that I had been completely outwitted by this scoundrel whom I had welcomed to my own hearth as a friend.

Early next morning—or rather, that same morning, for it was past three ere I crept home to my anxious wife, whose curiosity I had to satisfy with a relation of what had happened—men were set to work to drag the stream for the body, which I felt sure lay hidden somewhere. But nothing was found—a strange fact, considering that the pool, although deep, was very small, and that the stream was both shallow and sluggish. There was picked up, however, a torn, blood-stained handkerchief marked with the initials J. C.

When I returned home, heartbroken, and not knowing how next to act—for during my quiet, monotonous life in this little place my faculties for grappling with sudden emergencies had rusted—I found that my wife had told Helen of my suspicions. The poor girl's agony at this cruel dashing away from her lips of the cup of happiness she was about to taste, was the most painful thing I had ever witnessed, and I resolved that I would spare no time or trouble or expense in endeavoring to bring the villain to justice who had so foully wronged her.

We had a London detective down to aid the local police in their researches, but their united industry and sagacity could throw no light on the mystery, and at the end of three weeks we were as much in the dark as before.

When the clothing found in the professor's portmanteau was searched there was found a small note book, on the fly leaf of which was written the name De Bussy. The book was alphabetically arranged with proper names of all nationalities, followed by addresses in Paris, London, Vienna, Berlin and St. Petersburg. One leaf alone was torn off almost from the top, and to my amazement I saw on the remaining fragment the name Rayne. Jack Corner's surmise had evidently been correct; the *soi-disant* professor was nothing else but a secret agent of the Socialist party, and I was convinced that the names in this book were those of other agents in various parts, and that the Englishman who had taken refuge in my room at the Rue de Douai six years previously was one. That this particular leaf, and this only, was torn was to me very significant.

(To be continued).

CREDULOUS HUMANITY.

SOME OF THE POPULAR MEDICAL SUPERSTITIONS OF THE PRESENT DAY.

The *New Orleans Medical and Surgical Journal* recently published an instructive paper by Henry Dickson Bruns, M. D., on the popular medical superstitions of the day, from which we condense the following interesting abstract:

All of you know, I suppose, the belief that a potato carried in the pocket will cure hemorrhoids or rheumamatism. Perhaps the "buck-eye" (*æsculus flava*) used in the same manner is more familiar to you, for in the Southern and Western States these therapeutic properties are ascribed to this seed. I have known a most intelligent gentleman wear a string of amber beads about his neck to prevent asthmatic attacks, and another a necklace of coral to avert an apoplectic seizure. The negroes of Maryland, Virginia and the District of Columbia assert that a mole's foot cut off and hung around a child's neck will help it in teething. In parts of Pennsylvania the superstition prevails that bleeding from the nose may be arrested by the recitation of certain words from the Bible by an occult person—*i. e.*, the descendant of a seventh son of a seventh son. To relieve the pangs of toothache a branch is cut from a sweet appletree during a certain phase of the moon; both ends of it are sharpened, and the "occult person" with it pricks the gum until it bleeds. Stump water—the water that gathers in an old stump—is regarded as a sovereign remedy for freckles, but to be efficient it must be taken before daylight on the 1st of May and the two following mornings. The chances for health and long life of a puny child are thought to be improved by boring a hole in a tree, putting a lock of the child's hair in the hole and plugging it up. The use of eye-stones, the crystalline lenses of crabs and crayfish hardened by boiling, and flaxseed for the removal of foreign bodies seem to me mainly superstitious, though occasionally, perhaps, the offending particle adheres to the stone or seed and is removed with it. But we must class as rankly superstitious the employment of head lice for the cure of corneal pannus, an instance of which occurred in the practice of Dr. A. D. Williams. Our fellow townsman, Lafcadio Hearn, who is curiously learned in all such lore, says that "in New Orleans among the colored people, and among many of the uneducated of other races, the victim of muscular atrophy is believed to be the victim of voudooism;" and "that it is dangerous to throw hair combings away instead of burning them, because birds may weave them into their nests, and while the nest remains the person to whom the hair belongs will have a continual headache."

In the vicinity of Stamfordham, in Northumberland, whooping cough is cured by putting the head of a live trout into the patient's mouth and letting the trout breathe into the latter. Or else a hairy caterpillar is put into a small bag and tied around the child's neck. The cough ceases as the insect dies. Another cure for whooping cough is offerings of hair. In Sunderland the crown of the head is shaved and the hair hung upon a bush or tree, with the full faith that as the birds carry away the hair so will the cough vanish.

In Lincolnshire, a girl suffering from the ague cuts a lock of her hair and binds it around on aspen tree, praying the latter to shake in her stead. In Rosshire, where living cocks are still occasionally buried as a sacrificial remedy for epilepsy, some of the hair of the patient is generally added to the offering. At least one holy well in Ireland (that of Tubber Quan) requires an offering of hair from all Christian pilgrims who come here on the last three Sundays in June to worship St. Quan. As a charm against toothache it is necessary to go thrice around a neighboring tree on the bare knees and then cut off a lock of hair and tie it to a branch. The tree thus fringed with human hair of all colors is a curious sight and an object of deep veneration. The remedy for a toothache at Tavistock, in Devonshire, is

The Standard of Excellence.

KINGSFORD'S

OSWEGO

Pure and Silver Gloss



STARCH

KINGSFORD'S

OSWEGO CORN STARCH

FOR

Puddings, Custards, Blanc-Mange, Etc.

THE PERFECTION OF QUALITY.

WILL PLEASE YOU EVERY TIME.

Always ask your Grocer for these goods.

COLDEN'S LIQUID BEEF TONIC.

ORIGINAL LABEL:
"Colden's Liebig's Liquid Extract of Beef and Tonic Invigorator."

AN INVALUABLE AID IN THE TREATMENT OF ALL CASES OF DEBILITY.

Established 15 Years. Endorsed by Scores of Physicians. Essentially Different from all other Beef Tonics. Beware of Imitations.

COLDEN'S LIQUID BEEF TONIC consists of the Extract of Beef (by Baron Liebig's process), spirit rendered non-injurious to the most delicate stomach by extraction of Fusel Oil, soluble Citrate of Iron, Cinchona, Gentian and simple aromatics. An official analysis of this preparation by the eminent chemist ARTHUR HILL HASSALL, M. D., F. R. S., and an endorsement by SIR ERASMUS WILSON, F. R. S., is printed on the label of each bottle.

Its Range of Action Embraces all Cases of Debility.

By the urgent request of several eminent members of the medical profession, I have added to each wineglassful of this preparation two grains of SOLUBLE CITRATE OF IRON, and which is designated on the label as "No. 1," while the same preparation, without Iron, is designated on the label as "No 2."

It acts directly on the sentient gastric nerves, stimulating the follicles to secretion and gives to weakened individuals that first pre-requisite to an improvement, an appetite.

☞ *I will, upon application, send a sample bottle of* ***Colden's Liquid Beef Tonic*** *to any physician in regular standing. Please ask your Dispensing Druggist (if he has not already a supply) to order it. In prescribing this preparation physicians should be particular to mention* ***"COLDEN'S"*** *viz:* ***"EXT. CARNIS. FL. COMP. (COLDEN)."*** *It is put up in pint bottles and can be had of Wholesale and Retail Druggists generally throughout the United States.*

C. N. CRITTENTON, Sole Agent,

115 Fulton Street, N. Y.

Please Mention the AMERICAN ANALYST.

to bite a tooth from a skull in the churchyard and keep it always in the pocket.

Spiders are largely concerned in the cure of ague. In Ireland the sufferer is advised to swallow a living spider. In Somerset and the neighboring counties, he is to shut a large black spider in a box and leave it to perish. Even in New England, a lingering faith in the superstitions of the mother country leads to manufacture of spider-web pills for the cure of ague.

In Devonshire, the approved treatment for scrofula is to dry the hind leg of a toad and wear it round the neck in a silk bag; or else to cut off that part of the living reptile that answers to the part affected, and, having wrapped the fragment in parchment, to tie it round the sufferer's neck. In the same county the "wise man's" remedy for rheumatism is to burn a toad to ashes and tie the dust in a bit of silk to be worn round the throat. Toads are made to do service in divers manners in Cornwall and in Northampton for the cure of nose-bleeding and quinsy; while "toad powder," or even a live toad or spider, shut up in a box, is still in some places accounted as useful a charm against contagion as it was in the days of Sir Kenelm Digby. The old small-pox and dropsy remedy, known as *pulvis æthiopicus*, was nothing more or less than powdered toad.

Frogs, too, are considered remedial. Thus, frog's spawn placed in a stone jar and buried for three months till it turns to water has been considered wonderfully efficacious in Donegal, when well rubbed into a rheumatic limb. In Aberdeenshire, a cure for sore eyes is to lick the eyes of a live frog. A man thus healed has henceforth the power of curing all sore eyes by licking them! In like manner, in Ireland, it is believed that the tongue that has licked a lizard all over will be forever endowed with the power of healing whatever sore or pain it touches.

In some of the Hebridean Isles, notably that of Lewis, the greatest faith prevails in the efficacy of perforated water-worn stones, called "snake-stones." These are dipped into water, which is then given to cattle as a cure for swelling or for snake-bite. If the stone is unattainable the head of an adder dipped in the water gives an equally good result.

In Devonshire any person bitten by a viper is advised to kill the creature at once and rub the wound with its fat. It is said that this practice has survived in some portions of the United states, where the flesh of the rattlesnake is accounted the best cure for its own bite. Black, in his "Folk Medicine," states that the belief in the power of snake skin as a cure for rheumatism exists in New England. Such a belief is probably a direct heritage from Britain.

In Durham an eel's skin, worn as a garter round the naked leg, is considered a preventive of cramp, while in Northumberland it is esteemed the best bandage for a sprained limb.

The common wart, that curious little tumor the microscopical anatomy of which approaches so closely the malignant type, that while its clinical behavior is so entirely benign, may be said to be fairly encrusted with superstitions. I have heard rubbing with a pea, a piece of meat, stolen or otherwise procured, an apple, a potato, all of which are buried and allowed to rot away, highly extolled by persons in all classes of society. My Pennsylvanian authority states, that in his part of the world the favorite cures are rubbing with a potato, which is afterwards thrown to the hogs, or tying a knot over each wart in a bit of string, which is then buried at the north-east corner of the house under the eaves. They may be cured by the "occult person," who utters certain words and blows them away. "The Northumbrian cure for warts is to take a large snail, rub the wart with it, and then impale the snail on a thorn hedge. As the creature wastes away, the warts will surely disappear. In the west of England, eel's blood serves the same purpose." The behavior of warts is so unaccountable—"they come like water and like wind they go"—witness the sudden outbreak of crops of warts upon the hands of cleanly persons, the disappearance of many warts when one or two in the neighborhood have been removed by the action of caustic, that we can readily explain many of these beliefs as originating in cases of coincidence mistaken for cause. The same explanation probably applies to the cure by very small doses of magnesium sulphate taken every morning, and to the origin of many of the other superstitions I have mentioned. In still other cases an essential and very useful part of the practice has been omitted through ignorance or stupidity, and the remainder has survived to excite our wonder at human credulity and love of the mysterious. For instance, a bit of carrot or onion is sometimes pushed into the ear to relieve ear or toothache. Originally, doubtless, the succulent vegetable fragment was boiled and introduced while very hot, and the caloric did to a certain degree relieve the pain, for I have often known persons to apply a hot onion to an aching ear and obtain comfort. But if we can thus explain a number of these popular delusions in this way, what are we to say to the two following:—

The *British and Colonial Druggist* relates that a curious display of superstition was lately witnessed at Maryhill, where measles and whooping-cough were prevalent. A travelling candy-man and rag-gatherer's cart, drawn by an ass, was standing before a row of houses a little off the highway. Two women, each the mother of a child suffering with whooping-cough, took up a position one on each side of the ass. One woman then took one of the children, and passed it under the ass's belly to the other woman, the child being held with its face towards the ground. The second woman caught the child, and giving it a gentle somersault, handed it back to the first woman over the ass, holding its face towards the sky. Each child was so treated three times, after which the ass was allowed to eat something from the child's lap. Subsequent inquiry showed that the mothers, whose number had been increased by two others during the ceremony, were thoroughly satisfied that their children were the better for the enchantment.

In an address on the "Psychology of Joking" Dr. J. H. Jackson gives an illustration of what he calls "Mental Diplopia." Killing a rabid dog to prevent people already bitten by it going mad; a cleanly mother, from maternal solicitude, refraining from washing her baby's head lest it should come to have water on the brain; anointing a blade with healing salve to cure a wound by it inflicted.

And apropos of rabid dogs, one word about mad-stones. Every now and then the daily papers give us accounts of marvellous cures wrought through the influence of mad-stones, and by collecting these I have come into possession of some valuable facts. Precious as they are, there seems to be quite a number of these stones in different parts of our country. Virginia, Georgia, Missouri, Kansas and New York rejoice in the presence of one or more. The stone is usually small, porous and of a dark color, though the Kansas stone is described as "nearly white." In all cases the mode of application is the same; the stone is applied directly to the bite or to an incision in the neighborhood; if the wound be envenomed the stone clings tightly, for it possesses diagnostic as well as therapeutic virtues, and the person to whom it refuses to adhere may dismiss care from his mind and go on his way rejoicing. On the other hand, if the wound be a poisoned one, after "clinging" the stone is observed to undergo a change of color, the tint varying in every instance I have seen reported from a "poisonous green" to that of a fresh oak leaf. This being accomplished, the intelligent mineral, like a sated leech, drops off. It is then soaked in warm water or milk, when the charge of poison being removed it resumes its former color; the process is repeated until the stone refuses to "cling," when the cure is accounted complete. Bites of poisonous serpents, scorpions and even spiders are treated in a similar manner. The application, as far as I have been able to gather, is usually painless, but in one case "as the stone adhered a scream of unutterable anguish escaped from the lips of the sufferer, as if life itself was being drawn out." (Not so incredible, perhaps, when we remember, in spite of all that has been said and written,

BURNETT'S
PERFECTLY PURE HIGHLY CONCENTRATED
Standard Flavoring
EXTRACTS

THE superiority of these Extracts consists in their
PERFECT PURITY AND GREAT STRENGTH.

There is no subject which should more engross attention than the purity of the preparations which are used in flavoring the various compounds prepared for the human stomach.

They are not only true to their names, but are prepared from fruits of the best quality, and so highly concentrated that a small quantity only need be used.

JOSEPH BURNETT & CO., Boston, Mass.



We begin next September our usual heavy fall advertising. Before then we wish to know which papers will pay us best. Therefore we shall, until September 1st, send **FREE** to anyone mentioning the paper in which he saw our advertisement, our package 20 samples cloth, from which we cut to order the

FAMOUS PLYMOUTH ROCK
CUSTOM-MADE $3 PANTS
and **Suits at $13.25.** Each package contains guaranteed self-measurement blanks, and a linen tape-measure, with full instructions.

PLYMOUTH ROCK PANTS CO.,
18 Summer St., Boston. 285 Broadway, N. Y.
Address all mail to Boston Office only.

"ROYAL POLISH"



The Most Reliable Dressing
FOR
Ladies' and Children's Shoes.

It is the BLACKEST.
It COATS the Leather the LEAST.
Does NOT INJURE the Finest Kid.

There is nothing AT ANY PRICE equal in quality, or so convenient and CLEANLY TO USE.

SOLD EVERYWHERE.

Ask Dealers for "BIXBY'S ROYAL POLISH."



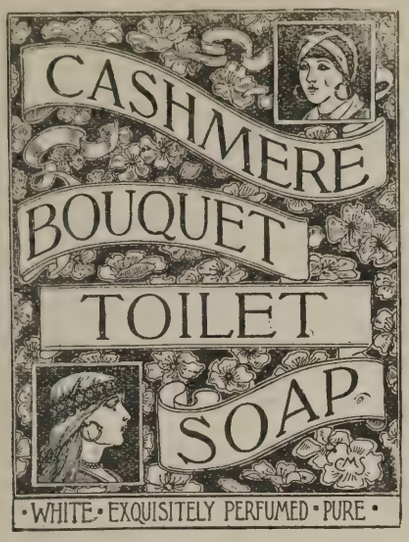
"BIXBY'S BEST"
For GENTS' BOOTS.

Shines Quickly!
Saves Labor and
Leather!!

—TRY—
"Size 5" OR
"Size B"
WITH
Pat. Sliding Handle



THE MOST PERFFECT EVER INVENTED.
Working under the box, ready for use when wanted



how little scientific teaching, practical scientific instruction, enters into our present systems of education, and against belief in mad-stones, wart cures or other superstitions, "culture" alone is powerless to protect us.)

Is it not incredible that at this day persons can be found to believe such nonsense? And yet I remember when a few years ago the child of a gentleman of culture and position in this city was bitten by a pet dog supposed to be rabid; the little victim was transported to Virginia, where a mad-stone was applied. As no evil resulted from the wound except, as in Goldsmith's ballad, the death of the dog, parents and child may now be numbered among the firm believers in the mad-stone myth.

OLEOMARGARINE.

ITS MANUFACTURE AND USE DEFENDED FROM A SCIENTIFIC AND ECONOMIC STANDPOINT.

At a recent dinner of the Boston Druggists' Association, Prof. J. F. Babcock presented a paper, "Oleomargarine," illustrated by samples of the genuine article, and followed by a general discussion of its merits and demerits. There were present twenty-four members of the association, and A. C. Smith was the presiding officer. Prof. Babcock's paper, as reported by the *N. E. Grocer*, was in part as follows:

The history of oleomargarine is the same old story of opposition, misrepresentation, and intolerance of a new idea, an idea scientific in its conception, successful in its practical execution and beneficial in its results to the great masses of the community to whose wants and opportunities it is adapted. It has been well said that he who succeeds in making two blades of grass grow where only one had grown before, was a public benefactor, and, if this be true, those who have developed the possibilities of a new, cheap, clean and healthful food are entitled to the highest praise. It is claimed that oleomargarine can be fairly said to meet those conditions.

Prof. Babcock then gave a resume of the composition of oleomargarine, and the process of its manufacture, and continuing, said:

It is but natural that a new product which comes into competition with established interests, should excite the violent opposition of those who are pecuniarily affected by it. A certain class of farmers agitated by those who had political ends in view, and commission men who handled the cheaper and ordinary grades of butter, banded together and made common cause in their attempts to crush and destroy a formidable rival. Falsehoods were industriously circulated; prejudices were played upon, and special acts, in many cases prohibitory, were passed by various State Legislatures, according to the importance of the dairy interests in each State. The culmination of agitation was reached in 1886, when the opponents of oleomargarine endeavored to tax the new product out of existence. The United States government was, by the butter interests, asked to impose a tax on oleomargarine of ten cents per pound, an amount which it was believed would be practically prohibitory. The injustice of this was too much for the majority of the people's representatives, and a bill was finally adopted and became a law which imposed a revenue tax of two cents per pound on all oleomargarine produced in the country, with very heavy special taxes in addition on all dealers, both wholesale and retail. The animus of the butter men is seen when it is considered that the tax on a retail dealer in oleomargarine is $48, while the retail liquor dealer's tax is only $25, and the tax paid by the retail tobacco dealer is $2.40. The United States law went into effect Nov. 1, 1886, and while its promotors intended and evidently expected that it would prove a death blow to oleomargaine, the results of its operation, while they have to some extent checked its production and sale, have on the whole been favorable to the product in many ways. The imposition of a tax under the revenue system, and the consequent record of the actual quantity produced, has given precise and accurate figures of the amount manufactured, and have shown that many of the claims of its opponents are absolutely without the slightest foundation in truth. The law provides that only good and healthful materials shall enter into its composition, and that any product which is otherwise, shall be seized and confiscated. The result of this is, that the United States revenue stamp which is found upon all packages, is a guarantee of the purity of the goods, and at the same time makes it well nigh impossible that the goods shall be sold for anything different from what they really are. Any one who cares to visit any store in Boston where oleomargarine is sold, and who takes the trouble to investigate the matter, will soon be satisfied that there are thousands of persons in the Commonwealth who buy and use oleomargarine in their families and on their tables, with the full knowledge of its character, and that the article is not butter but a substitute for it.

The reader then made reference to the proposed law now pending before the Legislature, and stated the position assumed by both parties in the controversy. Advanced dairymen and producers of the highest class of butter, he said, were opposed to all butter colors, but dealers in cheap and inferior goods were unwilling to do themselves, what they would like to require of the oleo people. The statements in regard to ladle-packed butter, which Professor Babcock has previously made, we then repeated, and the paper proceeded as follows:

A collection of the circulars and advertisements issued by the makers of butter color, develops some interesting facts and shows conclusively that, whatever butter dealers may claim, the use of butter color accomplishes three things:

1. It conceals defects and destroys one of the tests of good butter; and it makes butter to which it is added, no matter what its origin, appear as much like Jersey butter as possible.

2. Its use adds from 3 to 5 cents per pound to the market price of butter, for which the public receives no equivalent.

3. The use of butter color adds more than half a million pounds of cottonseed oil, as an adulteration, to the butter product of the country.

After numerous quotations from the circulars of a large number of manufacturers of butter color in confirmation of these statements, the professor concluded his essay as follows:

The annual product of butter in the United States is not less than 1,000,000,000 pounds per annum. It is generally admitted that one half of the butter produced is artificially colored. If this be so, and if natural high colored butter is valued at 5 cents per pound more than the uncolored article, it follows that the public pay no less than $25,000,000 per annum for an artificial color, believing it in most cases to be a natural color and an indication of superior quality, for which they receive no equivalent. It is also true that if one pound of color, which consists of annatto color dissolved in cottonseed oil, is required for 1,000 pounds of butter, there must be not less than 500,000 pounds of spurious butter added to the product of the country in the shape of cottonseed oil. For this the American people pay the price of butter to the honest farmer, who has such a horror of "bull butter," and is especially opposed to cottonseed oil when it is a constituent of oleomargarine. In conclusion, I will read certain propositions which I claim to be true of oleomargarine, and which I am confident will commend themselves to every fair minded and pecuniarily disinterested citizen:

1. This manufacture of oleomargarine is a lawful and entirely legitimate industry; the product is a nutritious food, clean, palatable and healthful; it is made and sold in large quantities in domestic trade, and is exported under its true name, and is consumed by thousands with the full knowledge of its character.

2. It has been subjected to the most rigid scientific tests and found to be a harmless and healthful food. There enters into the product no constituent that is not in common use upon the tables of our best families. It is made of pure and sound beef fat, leaf lard, vegetable oil mixed with milk, cream and pure butter; and while it is as clean, healthful and palatable as pure butter, it may be produced much cheaper, and is therefore more easily obtained by persons of limited means.

3. This new industry has not only furnished the people with a cheaper food, but it has increased the value of beef cattle and swine to the stock raiser. If the manufacture tends to diminish the profits of the dairy, it at the same time adds to the value of the products of equally important departments of agriculture.

4. All legitimate industries have a right to live. If an industry is lawful, healthful and pursued by honest methods, it ought not to be subjected to taxes, penalties and conditions not imposed upon other lawful pursuits. That oleomargarine may be substituted for butter, or that it is cheaper than butter, is no excuse for legislation that will injure or destroy it.

5. The fraudulent sale of oleomargarine as butter merits the severest punishment, but the means adopted to prevent deception ought not to operate in such a manner as to make an unjust discrimination between parties each of whom is engaged in a legitimate industry. The poor man has as much right to have his oleomargarine of a color pleasing to his eye as the rich man has to have his winter butter colored in imitation of Jersey. It would be better, however, and equally tend to prevent frauds, both in butter and oleomargarine, to prohibit the use of artificial color in these or any other food product where the color has the effect of misleading the buyer, or giving him the impression that the article is of a different character or of better quality than it really is.

STEEL AND CAST IRON.—A series of experiments lately made by a French machinist are said to have proved that steel loses weight by rust twice as rapidly as cast iron when exposed to moist air. Acidulated water was found to dissolve cast iron much more rapidly than steel. From this it would seem that steel bridges are less affected by the acids contained in the smoke of the locomotives than are iron ones.

AN INTERESTING SPIDER.—The habits of a running spider of Southern Europe, *Tarantula narbonensis*, Latr., studied by Herr Beck, are curious. It makes a verticle round hole in the ground about ten inches deep, and this, with a small earth-wall sometimes made round the mouth, is lined with web. A little way down is a small lateral hole into which the spider shrinks when an animal falls into the tube; when the animal has reached the bottom, the spider pounces on it. One can readily tell that a tube is tenanted by the bright phosphorescent eyes of the spider turned upwards. In fighting the spider erects himself on its last pair of legs, striking with the others. The bite is not fatal to man, but it causes large swellings. The children in Bucharest angle for these spiders by means of an egg-like ball of kneaded yellow wax tied to a thread. This is lowered with jerks into the hole, and the spider fastens on it, and can be pulled out; whereupon another thread is passed round one of the legs, and the animal is played with.

American Analyst,

Published on the 1st and 15th of each month.

Subscription, - - - - - - $1 per year.
Single Copies, - - - - - - 5 cents.
Subscriptions to foreign countries, - $1.50.

Remit by Express Money Order, Draft, P. O. Order, or Registered Letter.

Advertising rates on application.

EUROPEAN AGENCIES.

On file at "American Exchange," 449 Strand, London; and American Exchange," 35 Boulevard Des Capucines, Paris.

THE ANALYST PUBLISHING CO.,
Publishers.

H. LASSING, M. D., } *Editors.*
T. P. McELRATH, }

No. 19 Park Place, ... New York.

NEW YORK, MAY 15, 1888.

ANSWERS TO CORRESPONDENTS.

QUERY.—The terms applied in different sections of the country such as kerosene, coal oil, petroleum, astral, headlight oil all refer to a more or less refined petroleum oil.

MOTHER.—*What will cure a cold?*—So called colds vary considerably in causes and symptoms. On general principles, however, bathing the feet in hot water, drinking hot lemonade, and remaining in a warm but well ventilated room will help it, in fact, anything that will bring the blood in active circulation will assist nature in relieving itself.

OLEOMARGARINE AND COUNTER LEGISLATION.

A powerful reaction seems to be setting in against the unjust, and in our opinion unconstitutional, anti-oleomargarine law passed by Congress two years ago. Such a reaction was inevitable as soon as calm reason could be brought to bear upon the real merits of the subject. Whether the present Congress will take measures to rectify the wrong done in 1886 is doubtful, in view of the political pressure to which our national legislature is being subjected this year, but a bill has been introduced to repeal the existing law and to greatly modify, if not wholly abolish the taxes and license fees imposed upon the manufacture of oleo. Strong efforts have been made to secure the proper action upon the bill, the Western cattle interest displaying especial energy in bringing it before the personal attention of senators and congressmen. The oleo people have also issued a circular to which wide circulation has been given, the leading arguments of which are that the passage of the obnoxious law was obtained by fraudulent means; that bogus samples, concocted by the opponents of oleo were submitted, and that the law destroys one industry to benefit another. They claim that the law deals a severe blow to the cattle industry of the West—the tax levied to protect the cow has killed the steer; that 38,000 dealers have been driven out of the business of selling oleomargarine; and that the government, being in no need of revenue, has no right to tax oleo in any sum beyond the amount necessary to enforce the law. They ask that oleomargarine be included in a general act concerning adulterated food; that the tax be reduced to one cent per pound, and that the license fee for dealers should not exceed that charged for selling liquors and tobacco. The bill now before Congress covers more or less directly the points specified in the above synopsis. The attitude of the AMERICAN ANALYST in the premises was long ago declared, and we have never wavered from our original position. We believe oleomargarine, properly made, and honestly sold for just what it is, to be one of the greatest boons that modern science has wrought for the benefit of the poorer classes. As a substitute for butter it is of the highest value, and in at least five cases out of every dozen commercial oleomargarine is sweeter, purer and more wholesome than the average "farm dairy" or "store-packed" butter, which, with all its vileness, is still held at so high a price as to be practically an unobtainable luxury to the poor man. Our view is corroborated by the testimony of nearly every prominent scientist and economist who has investigated the question. Professor Atwater, confessedly our highest American authority on food economics, is emphatic in his advocacy of oleomargarine, and a long list of prominent persons might be similarly cited. The essay on the subject of Professor Babcock, published in another column of this issue, will be found of great interest, and his arguments in favor of the legitimacy of an honest traffic in oleomargarine are well put, as likewise those against the "class legislation" which permits the application of coloring matter to butter, but denies it to butterine. If Professor Babcock had added to his remarks the fact that the passage of the oleomargarine law had raised the wholesale price of butter from 21c. where it stood in 1885 to 23½c. in 1887, he would have scored an additional point in his argument. The current of popular sentiment having, as we have shown, set in strongly in favor of a repeal of the oleomargarine law, we ought not to be surprised to see some of the prominent opponents of the industry gradually come around to its support. A notable illustration was afforded on the 2d inst. at a "pure food" grocers meeting in the Mercantile Exchange, in this city, when Mr. F. B. Thurber electrified the house by an outspoken and earnest advocacy of oleomargarine. His sentiments were cordially received, moreover by his entire audience.

SOME PLAIN FACTS ABOUT CROCKERY.

Much of the ware popularly known as china ware is nothing more than crockery or glazed earthenware. What is known as French china is really hard porcelain, and is made by only one factory in the United States. Hard porcelain is composed in body of clay, quartz and feldspar. This body is fired in biscuit or the first fire at a low temperature in the second story of the porcelain kiln, using for its baking the surplus heat passing away after having done its greater work in the first story or gloss kiln where the porcelain is finished, or to p.ak more properly, is made. At this first burning the ware receives only sufficient fire to make it properly fasten together in form. It is quite fragile, easily broken with the fingers, and porous, not having yet had sufficient heat to commence vitrification. In this condition it is porcelain biscuit, and ready for the glaze tub. The glaze of porcelain is composed of the same materials as the body, and so compounded that those elements which are soonest fluxed by the influence of the heat, are in greater proportion than they are contained in the body. The porous, low fired biscuit is dipped into a liquid puddle of glaze. Upon being withdrawn its porosity quickly absorbs the excess of water, leaving a dry coating of the glaze compound which was held by the water in suspension upon the surface of the piece. This piece of porous biscuit covered with glaze is now cleaned of glaze upon its foot, or that part upon which it rests, to prevent its sticking or burning fast to the clay sagger or firing case, otherwise the glaze on the bearing parts would at the time of flowing, form a cement, fastening the piece and the sagger together. The pieces are placed separately in the saggers. The heat in firing hard porcelain is carried to such a high degree that the ware touches the point of pliability, almost the melting point. At this point of heat the body is vitrified, at the same time the glaze from its slightly softer composition is melted into the body of the ware, producing a hard, vitreous and homogeneous ware, properly known as true, hard porcelain. This is the only process known to the world to make hard porcelain, and is that used at Serres, Meissen, Berlin and elsewhere.

The earthenware method is just the reverse of this. The body is composed of much the same materials as a porcelain body, but differently compounded, and it is fired in biscuit or the first fire to a greater heat than a porcelain biscuit, and receives during that first burning the greatest heat to which it is subjected in the entire process of manufacture. The glaze is composed partly of the same materials as compose the body, with the addition of oxide of lead and boracic acid, which latter being soft, fluxes in the fire, enabling the glaze to flow at a low heat. It is fired the second time in the gloss-kiln at a lower temperature than it has previously been fired in biscuit. The results in flowing the soft glaze over the surface of the ware, making substantially a lead glass film or coating upon the surface of different compounds and materials, not homogeneous, not a part of the ware by being fused into the body as in porcelain. The body and glaze being thus in constant antagonism to each other, produce sooner or later what is technically called "crazing" or cracking of the enamel, for the reason that the body is one thing produced at a higher temperature and the glaze another, produced at a lower temperature, and not as in porcelain, body and glaze produced at the same time, and at the last and greatest heat. "China" is an English term applied to the hard vitreous ware of China and Japan, from the fact that the first ware of that kind came from China, introduced into Europe by the Portuguese, and by them named porcelain, and known only as porcelain in continental Europe. The term "China" has fastened itself upon a pottery ware, but it could have been just as properly applied to any other product of China as silk or paper, had that other product so completely mystified the world so long a time as did their porcelain. Many potteries in England and this country call their wares China, but they are not hard porcelain or true China ware. This explanation will help the reader more fully to understand other and more technical articles.

SCOTCH OATS ESSENCE.

The only opposing evidence to this mass of testimony which has so far appeared is an "analysis" printed in an obscure journal of this city which makes a business of publishing articles for pay. The analyst making this investigation tells us that the method u ed was that set forth by Dragendorff in his "Pflanzen Analyse," and by it he found no opium alkaloids. Unlike Dr. Eccles, however, he does not detail the steps by which he arrived at his conclusions. Any one having the slightest experience in such matters knows that considerable skill is requisite in making a search for alkaloids, that even an expert may have difficulty in separating them under certain conditions, and that time is a factor apt to be overlooked in attempting precipitation. Like the Irishman who could bring a dozen witnesses to testify that they had not seen him commit the offence of which he was accused, we presume the Scotch oats people may be able to find more than one analyst who could vouch for their stuff on the same plan.

The above polite morsel is reproduced from the *Druggists' Circular* for May. While that sheet is the last one in this city capable of rescuing the AMERICAN ANALYST, or anything else from "obscurity," and while we confess that we do not conduct our business on wholly philanthrophic principles, as the *Circular* would imply is its own case, and while, further, ours is not "the only opposing evidence" it has been confronted with, we have felt sufficiently interested in the outcome of this Scotch oats matter to make our contemporary's inunendos the basis for further investigation. We do not undertake to settle the old problem relative to "doctors disagreeing"—but we believe every intelligent and unbiased reader will concede the force of the following communication as a complete refutal to the *Circular's* sneering insinuations.

LABORATORY OF FRANCIS WYATT, PH. D., CONSULTING, ANALYTICAL AND TECHNICAL CHEMIST.

NEW YORK MERCANTILE EXCHANGE BUILDING,
Cor. Hudson & Harrison Streets.
New York May 7, 1888.

The Editors AMERICAN ANALYST:

SIRS: You have called my attention to an article in the editorial columns of a trade journal, "*The Druggists' Circular*," published in this city, and have asked me in reference thereto the following questions:

First. Whether I am willing to give details of the methods which I employed in testing "Scotch Oats Essence" for morphine.

Second. Whether I will express an opinion on the method described by Dr. Eccles in the April edition of the above named journal.

Replying to these in their order, I beg to say that when I sent you my certificate of analysis on the 10th April last, I was careful to distinctly specify that I had made use of the methods prescribed by Dragendorff in his "*Pflanzenanalyse.*" Every one admits that this work is the best and most exhaustive of its kind; it is perfectly familiar to every educated analyst, and will certainly be found occupying a convenient niche on his bookshelf. To any chemist, worthy to be so called, therefore, my simple statement would be sufficient, and as I have no intention of discussing a point of practice with novices, or pseudo toxicologists (!), I decline to give any other. For the satisfaction of certain of my confreres, however, I have no objection to explain how I prepared my sample. I evaporated 100 cc. of the Scotch Oats Essence (obtained from Ditman's drug store in Broadway) very nearly to dryness on the water bath. The residue was washed into a flask with warm distilled water, made up to 100 cubic centimetres, and 20 minims of concentrated chemically pure acetic acid and 5 cc. of plumbic basic acetate were then added. The flask was well shaken, allowed to repose for 4 hours, and its contents then passed through a filter, the residue being washed with 50 cc. of distilled water. The residue was freed from lead and examined (with negative results) for meconic acid, and the clear filtrate was also treated with a current of sulphuretted hydrogen gas for three hours, until all traces of lead had been removed. After filtration and careful washing, the latter liquid was exactly neutralized by sodium carbonate, evaporated to dryness on the water bath at a gentle heat, mixed with pure white sand; and submitted to the action of Dragendorff's solvents and reagents. No trace of morphine or other salt of opium was discovered.

The percentage of alcohol was determined by distilling a given quantity of the essence until two-thirds had passed over, when, made up to its original bulk with distilled water, my distillate had a specific gravity of .9580 at 60 deg. Fahr. In this regard, as you will perceive, it will be necessary for me to correct a clerical error; for wishing to return, as you requested, the amount of alcohol in terms of proof spirit, I omitted to cross out the printed words "Absolute alcohol" from my certificate. The latter should, therefore, have read, "*Proof spirit by weight*" 61.96 *per cent.*

Coming now to Dr. Eccles, I would fain content myself with pointing out that there are several substances, constantly coming under our notice in the laboratory, which would answer to the tests he has named, and which are entirely distinct from morphine. Since, however, with the sole exception of specific gravity, and percentage of alcohol, which are nearly correct, I have found all his determinations to be *erroneous in every particular*, this course would not be doing him justice. It might be misinterpreted, or misunderstood by those who are unacquainted with his *exposé*, and I will, therefore, briefly and fairly summarize the method he has published. Neglecting as beneath his notice, such details as, the presence or absence of albuminoid, gummy, coloring or extractive matters, inorganic acids, bases, or salts any of which might react with or be fatal to his final reagents, Dr. Eccles says that "several attempts were made to extract an alkaloid *but only with partial success at first!* Each trial gave just enough to show a slight milkiness with Meyer's reagent (potassio-mercuric iodide.) *Then a plan was adopted that gave one in an impure condition* (?). Finally when the essence was *freed from alcohol made slightly alkaline with ammonia and shaken vigorously during a couple of days at intervals of an hour or so for five or ten minutes each time, a fine precipitate settled down to the bottom of the solution. On passing the whole carefully through a pair of tared filters, washing first with water drop by drop and then with ether, there was found to be* 0.068 *gram of a granular whitish powder as the product of one bottle of six ounces.*

The appearance of the powder was that of *crude morphine* (?). The way it was produced *declared it to be morphine* and no other known alkaloid."

The italics and interrogation points are my own, and, on the assumption that I am now addressing myself to chemists who will understand its utter worthlessness as thus described by its author, I shall not indulge in any other comment. I cannot, however, refrain from saying that if the *mud* which Dr. Eccles so carefully collected and washed in his "*pair of tared filters*," bore even a trifling resemblance to "crude morphine" or could possibly answer to any of the tests for that alkaloid, my experience of twelve years active analytical work in the foremost commercial and industrial laboratories in the world, must hereafter count for nothing.

Yours respectfully,
FRANCIS WYATT, PH. D.

MOXIE NONSUITED.

Sometime in September, 1886, the AMERICAN ANALYST received from a person named Thompson, residing in Lowell, Mass., and styling himself "M.D.," a curiously impertinent and ill-worded letter, in which he referred vaingloriously to a certain compound which he was flooding the country with under the title of "Moxie Nerve Food," and in which likewise occurred the following sentence: "If you do not possess sufficent knowledge to earn $5,000 by analyzing the Moxie, from where did you steal the title of Analyst?" Knowing, of course, the deceptive purpose of the man in styling his mixture a "nerve food," that phrase being from a therapeutical standpoint of impracticable significance, we accepted his challenge as above quoted and did subject the article "Moxie" to a minute analysis, quantitative and qualitative. We believed, as we stated at the time, that the nerve-invigorating claim put forth on its behalf was a fiction calculated to impose upon the community. But at the same time we were actuated by another motive of just dealing, being desirous, if we should find ourselves in the wrong, to acknowledge our error and to make ample atonement for our misapprehension in the matter. In striving, consistently, to protect the public against imposition we are equally solicitous to avoid inflicting undeserved harm. But our chemist's analysis confirmed our original views to the fullest extent. In our issue of October 1, 1886, we published the full details of that analysis, showing the greatly vaunted "Moxie" to be merely a compound of simple familiar herbs, and utterly destitute of any alkaloid or of any active principle of any drug or vegetable known to the sciences of chemistry or medicine. In a word its only property was that of a mild and inoffensive tonic beverage. It could not probably harm anybody, but it could exert no more direct effect upon the brain or the nervous system than a fall in the price of putty could exert upon the development of the copper mines of Montana. For making and publishing this analysis, at the direct personal instigation of the above named Thompson, that worthy promptly brought suit in the Superior Court of this city, against the editors of the AMERICAN ANALYST for libel, claiming $20,000 damages. This, too, notwithstanding we expressly declined the $5,000 reward he had offered us. The result was as might have been expected. The plaintiff having no basis of right upon which to rest was finally non-suited. After a succession of legal skirmishes in each of which "Thompson, M.D." was worsted, Justice O'Gorman on May 10th brought the contest to a definitive close by peremptorily dismissing the complaint, granting an allowance of several hundred dollars to the defendants' counsel. Our purpose at present is not to comment upon the subject in any way, or to allude to any of the side issues it involved, but to simply announce the fact. We will only add that the course we followed in exposing Moxie we have straightforwardly followed in numerous similar cases of attempted imposition upon popular credulity and we shall persevere in that course of exposure wherever we find such impositions attempted. Our mission—and in maintaining this attitude the AMERICAN ANALYST stands alone in American journalism—is to protect the public, that is, the consumer, by cautioning it against fraud and misrepresentation, and at the same time to protect the genuine manufacturer by pricking the bubble of dishonesty wherever it is detected. From those two classes we receive our reward—the satisfactions of which are not appreciably lessened by the energetic abuse dealt out to us by their charlatan antagonists. The influence wielded by the AMERICAN ANALYST in this contest against falsehood was shown in the averments of Thompson that within three months from the publication of our analysis the sales of Moxie had fallen off to the extent of upwards of $20,000. The public is often said to be fond of being gulled—but in the light of these figures such an assertion would hardly seem tenable.

PERSIAN WINE MAKING.

WINE JARS ONE HUNDRED YEARS OLD.

The world moves slowly in the East. The Oriental never of his own free will changes anything. In traveling through Asia you are often brought in contact with scenes that conjure up at once visions of Old Testament times.

One of my most interesting recollections in connection with this phase of Asiatic life is a wine-making scene in Persia. There is a good deal of wine made and drank in the Shah's dominions, and the *modus operandi* of extracting the juice, fermentation, etc., is probably about the same now as it was in the days of King Darius. Neither the wine itself nor the process of making it has, we may easily believe, undergone any material change since Darius and his nobles held their nightly carousals in the banqueting halls of Babylon. The Persian nobles are as bibulously inclined these days as they were then, though they hold their revels less openly. The finest wine in Persia is made in Shiraz. It is known as Cholar wine, and as such is famous all over Central Asia. One of the first things given to me by the Afghan official who arrested me at Furrah, while I was making my tour through the country on my bicycle, was a bottle of Cholar wine. To get to Furrah it had been conveyed not less than 1,200 miles by mule or camel caravan. The people of Shiraz are celebrated throughout Persia for their gay and festive dispositions. While the average Persian, outside the nobility, is a calculating, mercenary trader and trafficker, the Shirazi is a gallant, a beau, a free liver. The best soldiers in Persia are at Shiraz, and the loveliest women; from Shiraz also issue hundreds of lutis or buffoons, who wander about all over the empire singing, tom-toming, and exhibiting trained monkeys. Persepolis, believed to have been a mighty city beforo the birth of Babylon, and about the earliest home of pomp, wealth and magnificence, is situated near Shiraz. The old pagan kings and nobility of Persepolis were royal Wassailers. Drunkenness and revelry were carried to an extreme in the marble halls of this ancient Iranian capital that we of to-day little dream of. One has but to taste the famous Cholar wine, note the curious difference between the Shirazis and other Persians of to-day, and then look up at the old ruins of Persepolis to come to the conclusion that the three things have some mysterious connection.

No finer grapes are grown anywhere than in Persia, saying nothing of peaches, apricots, pears, and other fruits. In some seasons they are so plentiful, too, and so cheap that the people feed them to their horses and donkeys. On certain varieties of sweet grapes horses are said to thrive very well indeed for a while. For several months in the year they also form one of the staple articles of food for the poor. Every autumn one meets on the roads whole caravans of donkeys and mules, and sometimes of camels, laden entirely with grapes. They are carrying the grapes from outlying vineyards to the cities for making wine. Certain vineyards, or districts, are celebrated for the excellence of their wine grapes, and the grapes from these particular vineyards are sometimes carried to cities distant several days' journey. The Cholar grapes grow in vineyards four days' march from Shiraz, and are so highly valued for wine making that there is no end of rivalry and intrigue among the Shiraz nobles to obtain them. The grapes are packed in pannier baskets called lodahs. Each lodah holds anywhere from 100 to 300 pounds of grapes, two of the lesser size being a donkey load, and the larger a camel's.

I arrived in Persia in the middle of the grape season, and shortly after reaching Teheran became an interested spectator of the process of making wine there. The house in which I spent the winter belonged to Mr. N———, a member of the Persian Telegraph Department. It was a native-built house, with a square courtyard in the centre. One of the first things that awakened my curiosity was three huge earthenware jars standing in a row on one side of the compound. They were jars that stood as high as a man's shoulder, and bellied out much in the shape of slender barrels. Each vessel held about thirty-five gallons.

"What are they for—to hold rain water?" was the natural query that suggested itself to me.

"No," said N———, "they are wine jars, regular old Persian wine jars, that were in use 2,000 years ago."

"But not these same jars—2,000 years."

"No, not exactly; but those three jars have probably had wine fermented in them every season for the last hundred years." He then went on to explain further about the jars.

The Persians believe that these wine jars improve with age, just as wine itself does, and that better wine can be made in the old jars than in new ones. A wine jar a hundred years old is worth several times more than a new one, not because of any value attached to its antiquity in the abstract, but because it is a thoroughly seasoned vessel. Good wine, they say, cannot be made in new jars; the older the jars the better the wine. The Mohammedan injunction against the making and drinking of intoxicants has had the effect of making sad hypocrites of three-fourths of the upper class Persians. Even the mollahs and seyuds get drunk in secret, but openly they not only do not indulge, but they profess to regard those who do so with abhorrence. When the wine-making season arrives there is as much wire-pulling and diplomacy employed among the Persians to make wine on the quiet, without incurring a scandal, as there is here in a political campaign. The great scheme among the nobles of Teheran is to get in with some European who wishes to make wine for himself, and by going halves with him secure a supply for their own use. This is a very advantageous arrangement for both parties, if you get the right kind of a Persian. If he is an old resident of the place, and a connoisseur of grapes and wine, as a large proportion of the better class of Persians are, he is a valuable partner to have. He knows where the best grapes are to be obtained, all about making the wine by the old Persian process, and will come in handy in many ways. You on your part shield him from the scandal of making wine in his own house, or in his own behalf. If anybody comes in, the Persian partner is merely a visitor, an interested onlooker; when the intruder leaves he blossoms at once into the knowing superintendent and expert.

Such a partner Mr. N—— was fortunate in finding in the person of Mollah Agha Hassan—or, to be more correct, Mollah Agha Hassan did the finding. Hassan sent word round by his farrash one day, asking the privilege of an interview with N—— Sahib—a private interview. The interview took place that afternoon and ended favorably. Mollah Hassan had heard that N—— intended to brew wine, and was desirous of becoming a secret partner to the transaction. He would share half the expense, and superintend the making of the wine. When it was made he was to take half. The next day N—— and Hassan and I rode out to a big vineyard near Gulack, in the foot hills of the Elburz mountains, to pick out the necessary quantity of grapes. Hassan said it was best to buy them on the vines and leave them there until we were ready for them. We found the vineyard enclosed within substantial mud walls twenty feet high. A little stream of water flowed beneath an opening in the wall at one side, and out again at the other. The water was used for irrigating the vines. Instead of being trained upon posts or trellis work, the vines were trailing over long ridges of dry earth. The soil of the vineyard was piled up in long mounds or ridges about four feet high. The vines were planted in the trenches and grew over the ridges. These latter were made perpendicular on the south side, but slanting on the north. The vines are trailed up the northern slopes so as to benefit by the oblique rays of the sun, which are supposed to be better for the grapes than direct rays. Several varieties of grapes were in the vineyard, from little white grapes called kishmish, from which are made the sultana raisins of commerce, to big black grapes almost the size of egg plums.

Mollah Hassan looked the vineyard over critically, and finally selected a variety known as reich-i-baba, a grape of delicious flavor and extraordinary size. In parts of the vineyard where the vines had been freely irrigated reich-i-baba grapes were plucked and handed to us by the vintager, fully two inches long, one grape making a very big mouthful. Hassan, however, shook his turbaned head knowingly at these, and made his way over to a corner of the vineyard where the irrigating water had hardly been applied at all. Here the reich-i-babas were smaller, but where the ground had been kept the dryest and the grapes grew less plump and shiny, there Hassan staked off our purchase. "To make good wine," he explained, "grape vines should never be irrigated; they get all the moisture needed from the spring rains; at any rate, there should be no irrigation after May." The grapes would be in prime condition in about ten days, Hassan said, and after stipulating with the vintager for plucking and packing them in lodahs, we rode back to Teheran. The next day the big jars were thoroughly scoured out with warm water, Hassan being on hand to oversee the job. He would sit on a mat smoking the *kalian* and watching the operation, every now and then going out to stick his head into a jar and smell and give further orders. At length his critical nostrils were satisfied, and the jars were placed in the full blaze of the sun to air and dry. In accordance with Hassan's orders they were left to bake in the sun until a day or so before commencing operation on the grapes. At night pieces of carpet were placed over the mouths. In the meantime Hassan had duly inspected the cellar, had it swept out clean, and any possible suggestion of moisture driven out with a charcoal fire. There was no moisture anyhow, but Hassan said this was a very important point, and so he insisted on the charcoal fire.

On the day before the grapes were to come in Hassan put in his appearance, as usual, after *chota hazari*. The jars had been moved into the cellar the previous day. Soon after his arrival his gholam arrived with a big round cake of sweet mutton tallow. Hassan then sent him to the cook to borrow a copper kettle. After smelling of the kettle and ordering it to be heated on the fire, he placed the tallow therein and had it heated to the boiling pitch. While it was like boiling oil he carried it down the cellar, and with a little whitewash brush spread a thin film of tallow over the insides of the jars. Having finished this to his satisfaction he pronounced everything ready. Cloths had been spread on the cellar floor, and a couple of hasseens, or flat earthenware pans, provided. Next day came the grapes, about a thousand pounds. They were carefully sorted over, all unripe or bad grapes being cast aside and spread out on the cloths in the cellar. Hassan's gholam now appeared upon the scene with a couple of ragged Jews. In Persia Jews are always employed to perform any menial task that is regarded among the Mohammedans as disreputable. No Mohammedan would engage in treading out wine except he was certain of never being found out. The two barefooted Jews were made to wash and dry their feet, and then get into the hasseens. With their trousers rolled up above the knee they trod the grapes as other assistants threw them in. This treading was kept up all day, Hassan sitting watchfully by to see that the work was thoroughly done. As each panful was finished it was dumped into a jar, stalks and everything.

When the jars were about full they were covered over with a cloth, the door of the cellar fastened, and the Jews told to come back on the third day. Hassan himself, however, came round on the following day, his gholam carrying a thing like the dasher of an upright churn. With this he thoroughly mixed up the substance in the jars, which already showed signs of fermentation. On the third day the skins and stalks were found in a compact cake on the surface. Hassan put his hand to the jar about half way down, and with a smile of approval bade me do the same. The jar was quite warm, showing that the fermentation was progressing properly. With the dasher the Jews plunged the collected cakes down into the wine again and thoroughly churned and stirred the mass about. The fermenting mass hissed and bubbled, and Mollah Agha Hassan winked a knowing wink and stroked his beard. Several times during the day Hassan marched the Jews into the cellar and repeated the stirring-up process. Two days later Hassan appeared, with an affair very like a small besom. This he now used instead of the dasher, and in a different manner. The besom was thrust down to the bulge of the jars and swept round and round for ten or fifteen minutes, keeping the liquor in a swift eddy. In a few days Hassan called again, and ordered the floating skins and stalks to be removed. Every two daps this process was repeated, and in about three weeks fermentation had ceased. On the twenty-fourth day Hassan declared the wine ready for straining. It was strained through a canvas bag and stored away in carboys. Some for immediate use was bottled off into native bottles called baggallis. These baggallis are flat flasks of glass, blown thinner than an egg shell. When empty the merest flip of the finger nail will shiver one, but when full they stand a good deal of knocking about. The baggali holds about a pint and a half. N——'s brew cost him about a half keran, or ten cents, a baggali.

The wine was drinkable as soon as made, but although light to the taste it was fearfully deceptive. One glass would find the whereabouts of a person's head; three glasses would lay out anybody but an old toper.

In Hamadan the people, instead of racking the wine off into carboys, keep it in the big jars. These are half buried in the ground out-doors, and in the winter are covered over by heaps of horse manure to keep the wine from froezing. Well made Persian wine does not need to be kept air-tight. The Persians merely tie a cloth or a wad of cotton over the mouth of the carboys.

LEAD PIPES.—Leaden pipes for the conveyance of water were brought into use in 1236.

WORTH CONSIDERING.—A physician recommends that all the wood used in the interior construction of houses and all the plain surfaces of plaster should be thoroughly oiled or varnished, so that the power of absorption of foul air and gases should be destroyed.

CHICAGO ANALYSTS.

A MEDLEY OF SCIENCE, ADULTERATION AND IMAGINATION.

"Doctor, here is something that my wife has tried to smuggle into my food. I wish you would have it analyzed, no matter what the cost. My wife has acted strangely of late and I am very much alarmed about her." The physician's visitor gave the man of medicine a powder wrapped in a small piece of paper, and the following day the doctor carried the suspected article to Professor E. B. Stuart, of the Chicago College of Pharmacy. The latter gave it immediate attention, as the gentleman who desired the analysis suspected that his wife had been attempting to poison him. "If there was ever a careful quest," said the professor, "it was made in connection with that powder. I tried proximate, ultimate, and every other kind of analysis, but all to no purpose. That powder defied me. I became so interested in the matter that I thought of it in the street cars and dreamed of it at night. It became a sort of passion, and it was not until after a month of repeated analyses and investigation that I confessed to the doctor that I could not reach any satisfactory conclusion. For many months, however, that case bothered me. A year passed. One day, in strolling up State Street, I saw an old man sitting on the curb with a tray filled with what he called 'East India Root.' He said it possessed wonderful medical properties, and would cure dysentery. I gave him 25 cents for a bunch and through curiosity analyzed it. Greatly to my astonishment and satisfaction I reduced it to the same resultant quantity as the analysis of the mysterious powder had presented. It was galangal root. It is a product of the Island of Hainan, in South China. It resembles, when powdered, the product of ginger root. Street fakirs sell it as a magic cure for catarrh, headache, cholera, scarlet fever or whatever happens to be the disease uppermost in men's minds.

"Yes, I ascertained why the man's wife had attempted to introduce it into her husband's food. The woman was a good, simple-minded creature, who imagined that her husband was in love with the servant girl. She had consulted an alleged fortune teller, who gave her the powder of galangal root as a charm with which to win the husband's alienated affection. Analytical chemists have strange experiences, some of which are dashed with humor. Perhaps the most common affliction is the old woman who enters the laboratory with a stealthy tread. Producing a package from beneath the folds of her shawl, speaking in a whisper and glancing around as though she feared the walls might have ears, she uncovers a piece of boiled cabbage. She thinks there must be poison in it, for it has made all the boarders sick, and they threaten to leave her. Will I analyze it? Will I then, confidentially, tell her what I find in it? Sometimes I discover it has been tainted with age. Often the microscope at once reveals the presence of a growth of fungus, which has affected the digestive organs unfavorably."

"Some years ago," said Professor H. D. Garrison, Professor of Chemistry and Physics in the same college, "I was lecturing on potassium. A peculiarity of this element is that it takes fire on coming in contact with water. I held in my hand a pill made of the metal, and was cutting it into fine shavings with my knife. The shavings fell in a little pile before me, and after the lecture one of the students, a tall, lank fellow from Kentucky, came up to the desk, and picking up the shavings dropped them on his tongue. He had a habit of tasting everything. The saliva on the young man's tongue was enough to fire the potassium, and the way that Kentuckian did spit fire and yell for the next five minutes was enough to strike terror to any man's heart who didn't know what ailed him."

"Chicago," continued Professor Stuart, "has some highly accomplished and expert chemists. Professor Julian is an authority on the manufacture of steel. In the analysis of butter, lard, soap and fats, Professor Wesson takes high rank. Dr. Rose, formerly chemist of Ann Arbor, Mich., has made a specialty of the chemistry of packing house interests. Professor Dubiel, of this city, is authority on sugar and glucose. We have a number of really able agricultural chemists, who analyze soils and plants. For instance, if a certain amount of albumen is desirable in wheat, these chemists ascertain the quality of fertilizer it is desirable to add. It is difficult to find an 'all around' chemist now. Perhaps Dr. Doremus, of New York, is the best type of a man qualified in all branches. Men find more remuneration in adopting some specialty and confining themselves to it. Professor Haines is a toxicological specialist. Professor Garrison has of late years made a specialty of photographic chemistry."

"Yes," interrupted the Professor, "I have devoted five or six years to experiment. Photography is comparitively a new art or science. Its possibilities were never dreamed of. Formerly minutes were required to make the picture; now the one-thousandth part of a second is ample to do the work if the sunlight is strong. On Tuesday last I exposed but one-eighth of my lens with resnlts just as perfect as though the other seven-eighths had been shown. As for the time required, one one-thousandth part of a second I believe to be ample. Chemistry has brought up the plates and the material that is used to the highest point of perfection."

"Do not students in the science of chemistry make some strange blunders?"

W. C. Hovey, of the senior class of the college, who overheard the query, replied:

"Let me give an illustration which attested the wonderful nerve and presence of mind of a young lady, a Miss Cody, and a niece of Buffalo Bill. When I was studying chemistry in Oberlin College, Ohio, in 1883, Miss Cody was a member of the same class. She is a petite lady, and we didn't imagine that she would teach us all a lesson in courage. The young lady who was working by the side of Miss Cody in the laboratory held a bottle of ether too near the flame, and fire flashed out. The girl stood transfixed, and we were all too much startled for a few seconds to stir. Miss Cody was equal to the emergency. Instead of seizing the bottle and throwing it away, and thereby precipitating a conflagration, she remembered that ether would not burn without air, and picking up the stopper of the bottle, she thrust it in place, quenching the flame immediately."

Said Professor Galloway, the secretary of the college and director of the chemical laboratory: "I had more fun once than I bargained for. In lecturing on phosphorus, I usually show that it is soluble in bi-sulphide of carbon. Such a solution being placed on a paper and exposed to the air a few minutes, spontaneously inflames and continues to burn until the phosphorus is all consumed. The same solution will spontaneously inflame if placed upon fur or clothing. One night at my home we had company, and I was anxious to entertain them. The lights were lowered and I retired to the kitchen, where my mother's black cat was sleeping. Picking up the animal I produced a bottle of the phosphorus and with a small brush was about to streak the cat with what our guests would regard as liquid fire when I turned the cat into the darkened parlor. Suddenly the door opened and, in my haste to conceal my mixture, I spilt the whole business on the back of the black cat. She made one bound through the dining room into the parlor, and there began such a caterwauling as that neighborhood never heard before. She was fairly drenched in phosphorus, and in the dark looked like a ball of fire as big as a bushel basket. Her first break was for my mother, whom she regarded as her best friend. Her best friend didn't recognize her, and when my mother began to scream and break for the hall door the guests took the alarm and a small panic ensued. I was so broken up with laughter myself that I dropped to the dining room floor helpless. It took me five minutes to explain the situation to my sister, and ask her to throw some water on the cat. Finally, after she had called my mother, and the beast had been drenched, we thought the trouble was over, but it wasn't. The phosphorus had settled into the hide, and as soon as the cat began to dry off, the fire broke out again. Three times that night we had to douse that cat, and when I went to bed I left my indignant mother sitting by the stove with her pet cat done up in her lap in a damp shawl."

"Once," said another professor, "a man brought me some pepper to analyze. At least he had purchased it for ground pepper. I worked on it for several days and found that the pure pepper had been mixed with ground leather of old shoes. There's adulteration for you with a vengeance."

"I worked three weeks once," said Professor Stuart, "on a compound which a tobacco merchant brought me. He said the stuff had been used to imitate tobacco. There was burdock, cabbage, and a variety of common leaf-plant in the stuff. Frequently I have analyzed food whose discoloration is due to incipient decomposition; also pinkish pork. Sometimes a pinkish color appears in starch kilns, which is due to the growth of fungus. Dr. Martin, the health officer of Milwaukee, brought me some ice cut from the Milwaukee River at the city limits, and I was charged to ascertain whether it did not yield an impure drinking product. The ice proved to be all right. Water running in ordinary current soon purifies itself."

OLIVES.

WHERE RAISED AND HOW USED.

Within certain latitudes the olives will grow anywhere and serve for almost any purpose. On a dry and stony elevation that would starve out a thistle, the plant luxuriates; and if the sea breezes may but fan the young shoots, so much more of promise is there for the olive harvest. Propagated chiefly by cuttings, the "willowy" looking twigs take root with a proud defiance of ordinary rules; and there is a whimsically planted grove of olive trees of unusual size and beauty near the town of Messa, in Morocco, which illustrates this trait in a remarkable way. One of the kings of the dynasty of Saddia, being on a military expedition, encamped here with his army. The pegs with which the cavalry picketed their horses were cut from olives in the neighborhood; and some sudden cause of alarm leading to the abandonment of the position, the pegs were left in the ground, and, making the best of the situation, developed into the handsomest group of olives in the district. Olives are mentioned in the earliest records of Egypt, and their introduction into Greece took place at least as early as 1,500 years before our era. Thence their cultivation naturally passed into Italy, the Romans especially prizing them; while Virgil mentions three distinct varieties, each of which had its own fastidious supporters in the ancient conflict of tastes. Pliny also tells us that they also grew in the heart of Spain and France though he awards the palm to the smaller olive of Syria, the olive of which was at least more delicate than that produced in the western countries. So far as regards the oil of Spain, and to some extent that of Italy, this judgment stands good to the present hour, for the reason that the Spanish olive is a larger and coarser fruit, while the Italian growers are too apt to detract from the limpid delicacy of the virgin oil by the sacrifice of quality to quantity. For the olive, like all generous givers, demands that you should "squeeze" him gently. The oil is expressed from the entire pulp and body of the fruit, and its quality stands in inverse proportion to the quantity produced. The first pressure yields a thin, pure liquid, almost colorless; and with this even the most fastidious of English palates rarely makes acquaintance. As the pressure is increased a less delicate product is the result; while if it is still further prolonged a rank and unwholesome residuum is obtained, wholly unfit for edible purposes. It should be mentioned that virgin oil does not maintain its freshness for more than a few weeks without

the addition of a little salt or sugar, and it is almost impossible for any one to realize the exquisite delicacy of this first expression of the freshly gathered olive, unless he has sojourned in such a district as that of which, say, Avignon is the center. The oil of Aramont, in Provence, was formerly supposed to have no equal in Europe. Both the olive and the manufactured oil of the southeast of France are, indeed, still unrivalled by those of any other country. The Italians pay more respect to the commercial aspect of their production, and among them the number of olive farmers and merchants is very large. They have a proverb, "If you wish to leave a competency to your grandchildren, plant an olive." Doubtless the advice is sound enough, for the trees often flourish for more than a century, and bear heavy crops to the last. But to the peasant of south France the olive is almost what the pig is to the English laborer. Prudent housewives there are as averse to the introduction of a new fruit at table as their thrirty English sisters are to the "new" loaf. In fact, they habitually preserve the darker berries for everyday use; for these not being so agreeable to the taste, "go" so much further—a necessary consideration when they oftener form the staple than the accompaniment of the meal.

Olives intended for eating are gathered while still green, usually in the month of September. They are soaked for some hours in the strongest possible "lye" to gid rid of their bitterness, and are afterwards allowed to stand for a fortnight in frequently changed fresh water, in order to be perfectly purified of the lye. It only then remains to preserve them in common salt and water, when they are ready for export. Among the Romans the olive held the privileged position of being equally respected as a dainty accessory and an ordinary food. It was eaten at the table of the temperate and the luxurious alike; and, while dividing the highly flavored dishes of their extravagant suppers, formed a constituent of Horace's pastoral meal—"Of olive, endive, simple tastes, and mallow."

COLORED POTTERY.

THE PRINCIPLE OF PAINTING PORCELAIN AND GLASS.

The manufacture of both glass and pottery dates back to prehistoric times, and we have no knowledge of either the first glass maker or potter. Whoever these individuals may have been, they could not have practised their art very long before noticing that certain impurities in their materials gave a more or less brilliant color to the finished product. In time they doubtless learned to recognize and select the earths which produced the highly prized hues, and from this rude beginning the modern art of vitreous ornamentation has arisen. The principle of both glass and porcelain painting are the same, and only vary in the practical details. Porcelain painting is really glass painting, as the colors are usually melted into the glaze or film of glass which covers it, or else the colors themselves are mixed with materials which form a glaze when melted. It has been found, that, when certain metallic oxides are melted into glass, they unite with it, forming metallic silicates or analogous salts, which in many cases show the greatest beauty and brilliancy of color. It is a very pretty experiment to melt a little borax in a crucible, and, after it has cooled, it will be perfectly transparent and colorless; then add a minute quantity of some salt of cobalt, and fuse again, when the whole will become a magnificent blue color. Other substances give different tints: thus, oxide of iron can give red, brown, violet, and yellow; chromium gives a beautiful green; manganese, violet, brown and black; antimony and lead, yellow; copper, green and red; silver, red and yellow; gold, a beautiful ruby red. Platinum and iridium give a fine black, and gilding or silvering is accomplished by melting the metals themselves into the glaze. Certain salts of gold also have the property of reducing to the metallic state in the firing, producing a very brilliant gilding. These different colors are so characteristic that a system of chemical analysis has been founded upon them, and the chemist can often save himself much time and labor by noting the color of a borax "bead" in which a little of the substance under examination has been melted. The actual preparation of colors for porcelain painters is a much more difficult matter than the above facts would seem to imply. Much experiment is necessary to obtain all the different shades and intermediate tones. Unlike oil paints, the method of simple mixing cannot be followed. A mixture of blue and yellow in mineral colors, for instance, may give, after firing, anything but the green tint which a similar mixture of oil or water colors would produce. Such points can only be determined by actual trial. The composition of many of the most beautiful colors is kept a carefully guarded secret by the manufacturers possessing the recipe. The dark blue tint of Dresden porcelain was for a long time such a secret, and may still be so, although a few years ago we were informed at the Meissen Pottery that it was simply cobalt. Other unknown ingredients may, however, be added to it. The softness and delicacy of a fine painting on porcelain or glass cannot be surpassed by any work in oil or water color, and it possesses the additional advantage of being indelible and unchangeable by those natural agencies which will in time destroy the more perishable paintings on paper and canvas.—*Pop. Science News.*

CHAMOIS SKINS.

SOME HINTS AS TO THEIR USE AND PRESERVATION.

There are so many so-called chamois skins in the market that look and work so near to goat skins, remarks the *Carriage Monthly*, that we are often at loss to secure what is really the genuine article. A true skin, if properly cured, is one of the most useful, and, at the same time, the most pleasant thing to have in our possession; we are, therefore, bound to try and secure one. The best we have used, so far, are those which resemble the parchment order; there is little or no lint on them, and they seem to be all that can be desired in lifting the water when drying off. A great many use an oiled skin. We prefer the other, as the oil prevents the chamois from leaving a perfectly dry surface. A chamois skin should never be left in the water after using, but should be wrung out and hung up to dry; spread out carefully so as to leave no wrinkles; neither should it be used to wipe off color, as we have seen some painters do when striping or touching up; all paint stains not only make great hard spots on the skin, but help to wear it out sooner. There is another thing that should be avoided in using the chamois, and that is wiping the face and hands upon it when washing them. It was never intended that it should be used as a towel; there is always more or less soap remaining on the arms or about the neck, that is wiped off on to the skin, which clogs it up and causes it to become greasy. You should never put a chamois skin into warm water, not at least in a greater degree than luke-warm; if you do, you will find it will all curl up and become tough and thick, useless for any purpose you may wish to put it to. Now, if you should find a chamois skin that, to all appearance, has become ruined by grease, paint stains, or has been used for a towel until its original color has been lost, and it looks like a dirty old rag, and you are on the point of throwing it away, stop a moment, and see if we cannot, in a measure, bring it back so as to get good wear out of it before we finally discard it. The plan we have adopted, when we were so unfortunate as to find one of that description, was to take a bucket of clean water, making it middling strong with ammonia, we have allowed the skin to soak in it over night; the next morning we have rinsed it out in pure water; after that we use plenty of pure white castile soap and water. The result was that we secured a very good skin again, and used it for some considerable time. It didn't take very long to do the whole business, probably a quarter of an hour or so. It more than paid for the trouble, for it really was a great deal better than when first used, as it became, through that process, what we might call thoroughly broken in, that means free from lint or other impurities.

TABLE ETIQUETTE.

SOME OF THE ARTICLES THAT MAY BE HANDLED WITH THE FINGERS.

There are a number of things that the most fashionable and well-bred people now eat at the dinner table with their fingers. They are:

Olives, to which a fork should never be applied.

Asparagus, whether hot or cold, when served whole, as it should be.

Lettuce, which should be dipped in the dressing, or in a little salt.

Celery, which may properly be placed on the table-cloth beside the plate.

Strawberries when served with the stems on, as they often are.

Bread, toast, and all tarts and small cakes.

Fruits of all kinds, except melons and preserves, which are eaten with a spoon.

Cheese, which is almost invariably eaten with the fingers by the most particular people.

Even the leg or other small piece of a bird is taken in the fingers at fashionable dinners, and at most of the luncheons ladies pick small pieces of chicken without using a fork.

FAITH CURE.

INFLUENCE OF MEDICINE FOR THE IMAGINATION.

What we have said of hypnotism, and particularly of suggestion, may lead the reader to understand the virtue of medicine for the imagination, of which the importance has already been intimated by earlier writers. Deslon asked why, if medicine for the imagination was the most effective, it should not be employed. We must be permitted to dwell for a moment on this medicine for the imagination, which is entitled to the name of suggestive therapeutics. The process is as follows: Influenced by a persistent idea, suggested by external circumstances, a paralysis is developed. The physician makes use of his authority to suggest the idea of an inevitable, incontestable cure, and the paralysis is cured accordingly. This cure, as well as the development of functional disturbance, was directly effected by an idea. An idea may therefore be, according to circumstances, a pathogenic and a therapeutic agent. This notion is not new; but, since it was misinterpreted, it has remained unfruitful. The most important of the organic disturbances produced by an idea, is an experiment on vesication, performed by Focachon, a chemist at Charmes. He applied some postage stamps to the left shoulder of a hypnotized subject, keeping them in their place with some strips of diachylon and a compress; at the same time he suggested to the subject that he had applied a blister. The subject was watched, and when twenty hours had elapsed, the dressing, which had remained untouched, was removed. The epidermis to which it had been applied was thickened and dead, and of a yellowish-white color; and this region of the skin was puffy, and surrounded by an intensely red zone. It was in 1869 that Russell Reynolds first noted the existence of motor and sensory disturbances, developed under the influence of an idea. The motor disturbance sometimes consists in spasms, in ataxic or inco-ordinated movements, and more frequently in paralysis, which affects the upper limbs. Erb gives to these symptoms the name of imaginative paraplegia.

The type of this paraplegia is afforded by Reynolds' first observation, which concerned a young woman who was affected by paraplegia under the following circum-

stances: She lived alone with her father, who had undergone a reverse of fortune, and who became paralytic in consequence of protracted anxiety. She supported the household by giving lessons, which involved long walks about the town. Influenced by the fatigue caused by so much walking, it occurred to her that she might herself become paralyzed, and that their situation would then be terrible. Haunted by this idea, she felt a growing weakness in her limbs, and after a while was quite unable to walk. The pathology of the affection was understood by Reynolds, who prescribed a purely moral treatment. He finally convinced his patient that she was able to walk; and, in fact, she resumed the practice.—*Pop. Science Monthly, April*, 1888.

DOMESTIC DIETETICS.

SEASONABLE FOOD.

May.

MEATS. — Beef, lamb, mutton, veal, ham, kidneys, liver, sausage.

GAME AND POULTRY.—Grouse, hare, pigeon, chicken, duck, goose, turkey, snipe.

FISH. — Halibut, lobster, catfish, cod, green turtle, eels, frogs' legs, scallops, whitefish, shad, Spanish mackerel, smelt, sheepshead, salmon trout, bluefish, red snapper, pompano, terrapin.

VEGETABLES.—Artichokes, carrots, onions, parsley, parsnips, potatoes, turnips, lettuce, asparagus, beans, cucumbers, garlic, radishes, rhubarb, savoy, sea kale, spinach, sprouts, tomatoes, watercress.

FRUIT.—Bananas, oranges, strawberries, pineapples.

PRACTICAL RECIPES.

AN EXCELLENT WHITE SOUP.—Two pounds scrag of mutton, a small knuckle of veal, three shank-bones of mutton, ¼ lb. lean gammon of bacon, three onions, three blades of mace, one teaspoonful of white pepper, a small piece of fresh lemon peel; boil all in three quarts of water till the meat falls to pieces, strain through a coarse sieve; mix two tablespoonfuls of ground rice very smoothly in a quarter of a pint of new milk; stir it into the soup. Put ½ lb. macaroni, that has been soaking for one hour in cold water, into a very nice tin saucepan, pour the soup over it, stir for ten minutes, then put on the lid and let it boil for half an hour.

NECK OF VEAL.—May be boiled or roasted—the latter only, if it be the best end, and sent to table garnished nicely with vegetables; it may also be broiled in chops, but it is best in a pie; it is sometimes larded and stewed as follows:

NECK OF VEAL STEWED.—Lard it with square pieces of ham or bacon, which have been previously rubbed in a preparation of shalots, spices, pepper and salt, place it in the stewpan with about three pints of white stock, adding a bay or laurel leaf and a couple of onions; also add a dessert-spoonful of brandy or whiskey, and stew till tender, then dish the meat, strain the gravy, pour it over the joint and serve.

TO BOIL NEW POTATOES.—The sooner new potatoes are cooked after being dug, the better they will eat; clear off all the loose skins with a coarse towel and cold water; when they are thoroughly clean, put them into scalding water, a quarter of an hour or twenty minutes will be found sufficient to cook them; strain off the water dry, sprinkle a little salt over the potatoes and send them to table. If very young, melted butter should accompany them.

RICH GERMAN ROLLS.—To one pint of hot milk add two ounces of sugar, three ounces of butter, two salt-spoonfuls of salt; stir well, and when cool add the beaten whites of three eggs. Sift together a heaping quart of flour, three heaping teaspoonfuls of Horsford's Baking Powder; mix all together and roll out the dough moderately thin, brush over it a thin layer of creamed butter, next a dust of sugar from the dredger, then a layer of well washed currants, and finally a liberal sprinkling of cinnamon; do the work briskly; roll the paste as for jelly roll, cut off inch slices and put them on buttered tins; cover with thin paper and bake; remove the paper after fifteen minutes, and when the rolls are brown remove from the oven. While hot, brush a little butter over the tops of them.

UNLEAVENED BREAD.—Take two-thirds of fine middlings and one-third of Graham flour; mix with cold water, or milk and water, into a fairly stiff dough, with the hand make into loaves about an inch in thickness, put on floured tins and bake first on the bottom of the oven, then lightly brown off on the top. This makes a very sweet and wholesome bread.

BEET SALAD.—Take equal portions of cold boiled beets and potatoes cut into dice; make a cream dressing as follows: Take one ounce of flour and one of butter, cook them together two minutes and add a pint of sweet cream; season with salt and pepper to taste; minced onion, parsley, pickles, capers, vinegar or lemon juice may be added if desired, and the dressing is used hot or cold according to taste. Put this over the vegetables when ready to serve. Beets may be mixed with all kinds of vegetables into compound salads.

PANCAKE TURNOVER.—Make a batter in the way for ordinary pancakes; put it in a frying pan, and, when lightly browned on one side, cover half with any kind of preserve (I used raspberry), turn the other half over it and fry a nice brown.

STICKS.—Sift together one quart of flour, a teaspoonful of salt, three teaspoonfuls of Horsford's Baking Powder; mix together two ounces of melted butter, a heaping tablespoonful of sugar and three gills of cold boiled milk; beat it up and add to the flour; beat the whites of three eggs, work it into the dough, flour the board slightly and turn the dough on the board; divide it in pieces as large as an egg, and with hands slightly buttered roll them in long thin sticks; bake them hard and crisp in a hot oven.

PUFF CRUST.—One pound of flour, one-half pound of butter, one-half pound of lard; cut lard and butter together; rub one-third of the shortening into the flour, and wet with one egg beaten with enough cold water to make the dough the same consistency of the shortening, according to the weather; roll the remainder of the shortening into the crust and set it in a cold place until thoroughly cooled.

CLAM TOAST.—Take about two dozen small clams, chop fine and let them simmer for thirty minutes in just enough hot water to cover them; beat the yolks of two eggs till light; add to the clams a little red pepper and half a cup of warm milk, then add half a teaspoonful of flour stirred smooth in a little cold milk; next, the beaten eggs; let this simmer a few moments, and pour over buttered toast. Serve at once.

MANGANESE IN STEEL.—An approximate idea of the amount of manganese contained in steel can be ascertained by means of the magnet. A magnet capable of lifting 30 pounds of ordinary steel or iron will only lift a few milligrammes if the metal contains 20 per cent. of manganese. So small a quantity as 8 per cent. of manganese will nearly neutralize the magnetic attraction.

SUBMARINE NAVIGATION.—Mr. J. F. Waddington, of Liverpool, England, a ship builder, is at work upon an electrical submarine vessel. Accumulators furnish the electricity. In the boat two men can remain beneath the water's surface for six hours. The vessel apparently is easily controlled, but has not yet attained perfection in the eyes of the inventor, who is engaged in a number of improvements.

OIL SPOTS ON WALL PAPER.—Thoughtless persons often lean their heads against papered walls and leave an oil mark there which is both unsightly and unhealthful. They may be removed by making a paste of Fuller's earth and cold water and laying some gently on the surface to be cleaned, leaving it until dry, when it may be brushed off and the spot will have disappeared. It works best on plain paper, and does not succeed so well on thoroughly colored.

OUR MISSION.

WHAT THE AMERICAN ANALYST IS DOING.

FIGHTING ADULTERATION.

The steadily growing favor which the AMERICAN ANALYST is constantly receiving at the hands of both the reading and the business public is the best evidence that could be afforded of the useful field of effort it occupies. It was the pioneer journal in this country to take up the fight against adulteration, and stands to-day, by public acknowledgment, the only competent exponent of the principles involved in that momentous struggle. To this end the realm of sophistication and fraud has been thoroughly explored, and its corruptions, as far as practicable, exposed to the public view. Charlatans, adulterators, and handlers of poisonous food have been summarily and uncompromisingly dealt with. Humbugs seeking to enrich themselves, through the sale of high-sounding specifics for human ailments, have been subjected to the crucial test of thorough chemical analysis of their goods, and where the latter, as too frequently occurred, proved to be utter frauds in name, composition, and pretended effects upon the system, the real facts have been placed before our readers in order to save the public from further unconscious imposition. The veil of chemical mystery in which tricksters of this kind ostentatiously envelop their processes of manufacture, protects them as yet from the criminal laws to which other confidence operators are held amenable, and the only method for counteracting their nefarious schemes is through public exposure by the newspaper press. In exposing this species of fraud, the AMERICAN ANALYST has conferred a benefit upon the community, to which the latter is giving grateful and substantial recognition.

SANITARY AND FOOD REFORMS.

In addition to the foregoing, the AMERICAN ANALYST is in constant co-operation with the Boards of Health of this and other cities, in efforts to secure sanitary and food reforms through organized methods, and while it is nobody's mouthpiece, it is conceded to be the only popular medium through which those bodies can bring their purposes and action intelligently before the general public. Reaching as it does all classes, manufacturers, merchants, physicians, chemists and private families all over the land, its influence is exerted over a vast radius, producing results as visibly marked as they are wide-spreading.

HOUSEHOLD MATTERS.

"Domestic Dietetics" is a department of special interest to ladies. It is very different and far superior to the ordinary cook book in that it tells the housewife suggestively what to buy, what foods are in season, as well as how to prepare the many varieties of dishes, all in a practical way easily followed. Other matters of great interest to housewives are also discussed.

PRACTICAL DISCUSSIONS.

Numerous other interests are also faithfully represented in our columns, such as the regular series of articles entitled, "Some Every Day Suggestions," relating to common experiences of society, the question of hygiene, and an infinite variety of practical subjects. In short, the AMERICAN ANALYST always keeps abreast in giving the fullest information on all matters directly or indirectly in the line of its proper field.

SCIENTIFIC INVESTIGATION.

The business transacted in the office of the AMERICAN ANALYST does not by any means all come to the surface in the pages of the paper. Minute analyses of chemical compounds, careful assays of minerals, examinations of questionable oils or doubtful condiments, and the many subtle operations incident to laboratory work are constantly required of us by correspondents far and near, and the results in many cases are not publicly recorded. In this manner, the influence of the paper encompasses a vast radius, from every point of which we receive constant expressions of approval, verbally, and in more substantial shape.

SUBSCRIPTION $1 PER YEAR.

Considering the amount of practical information regularly embodied in its contents, together with the fact that the subscription price for an entire year is only one dollar, we believe the day is approaching when the AMERICAN ANALYST will be regularly welcomed in every intelligent household in the land. Address,

ANALYST PUBLISHING CO.,
19 *Park Place, N. Y.*

TELEGRAPHIC SPEED.—When the first electric telegraph was established the speed or transmission was from four to five words a minute with the five needle instrument. In 1849 the average rate for newspaper messages was seventeen words a minute. The present pace of the electric telegraph between London and Dublin, where the Wheatstone instrument is employed, reaches 462 words, and thus what was regarded as miraculous sixty years ago has multiplied a hundred fold in half a century.

A WOODEN BAROMETER.—It is said that a very good and sensitive barometer may be made by gluing together strips of red cedar and seasoned pine. A strip of cedar about thirty inches long, one and one-half inches wide and one-eighth of an inch thick, is cut with the grain, and to one side of it must be glued strips of pine of equal thickness, with the grain running across that of the cedar. The combination is set on end, and will, according to the state of the weather, be found to have bent over to one side or the other, and this may be determined by trial.

ATOMIC MEASUREMENT. — The molecular theory is classed by Dr. Roscoe, President of the British Assogiation, among the most notable of modern scientific landmarks, and recent investigation has accomplished, as regards the size of the atom, what was formerly regarded as impossible. Recent researches have extended the methods of atomic measurement, with the amazing conclusion that the distance between the centres of contiguous molecules is less than a five-millionth and greater than a billionth of a centimeter: that is, assuming that the best microscopes magnify 6,000 to 8,000 times, a microscope which would magnify that result as much again would show the molecular structure of water—or, again, putting the statement in another or more absolute form, if it be supposed that the minutest organism which can now be seen were provided with equally powerful microscopes to those just named, these beings would be able to see the atoms.

WOODITE.—The material known as Woodite, devised by Mrs. Wood, a clever English woman, promises to become a very useful substance. Its chief ingredient is caoutchouc. During the past few months it has given good results for a variety of purposes, and is now declared to be especially adapted to many other uses. According to Sir Edward Reed, M. P., it has been produced in divers forms, such as fine sheets and ribbons for water-proof articles, dense blocks for resisting the blows of shot and shell, and particularly satisfactory rings for engine packing. One process converts it into an elastic, sponge-like substance; and another, in which it is mixed with whalebone cuttings, gives it a rough or frictional quality for mats. Some curious naval applications have been worked out. It is made into armor plates, which on being penetrated by a shot, closes so tightly that no water is admitted, and it is also formed into light and convenient cylinders for carrying compressed air to drive life boats, torpedo boats and scout boats, while it is suitable for making floating or partly floating cables for the protection against torpedo attacks, etc.

BUSINESS NOTES.

IMPEROYAL FLOUR.

The average housekeeper pays but little attention to the intrinsic value of the flour which he or she employs for domestic use. So long as it is fine, white and uniform, no objection is ever raised nor even question asked. This indifference is to be deeply deplored. It is a direct bid for dishonest tricks and practices on the part of miller, wholesale grocer and retailer. That these practices are far from uncommon is shown by the researches of chemists and physicians, as well as by the reports of the Boards of Health of Paris, London, Berlin, New York and Chicago. According to these investigations whiteness of flour and bread is secured by the use of alum. ammonia alum, impure phosphate, decolorizing chemical compounds and baking powders of various sorts; fineness by extra bolting and other processes which remove the gluten, the phosphoids and the bulk of the flesh and brain-forming compounds, and leave behind a powder that is barely more than pure starch. In some instances wheat flour is further adulterated with cheap starch made from corn and potatoes.

When it comes to the multitudinous "self raising," "prepared and patent" flours with which the markets of the world are flooded, the evils assume larger proportions. Any and all sorts of chemicals are used to generate the gas with which the bread is "raised," the only condition being that the stuff employed shall be cheap and that it shall produce enough aeration to make the finished product light and porous. Air, ammonia, ammonia carbonate, impure alcoholic vapor, aqueous vapor, traces of hydrochloric, acetic, sulphurous and hydrosulphuric acids are among the gases which have been found in bread made from these self raising flours.

The use of these inferior and often unhealthful flours is indefensible. The ignorance, carelessness and recklessness displayed by those who employ them is at times a crime against the human body.

II.

The adage that bread is the staff of life is as true to-day as in the long gone centuries when it first found utterance. Wheat, the king of all the cereals, is an ideal food. It contains the four food elements in exactly the proportions demanded by the physical economy in tropical, semi-tropical and temperate latitudes. These are gluten and other flesh forming ingredients, starch or the heat producing, oil and mineral matter. A bread made from this wheat when ground into flour would be a perfect food. While the great wheats of the world vary considerably, the best for general use, and especially for bread making, are found in our own land. The famous kind grown in Italy is especially available for macaroni; that in Austria for the hard bread and firm nudels of Vienna cooking; that of China, India and the East for boiling, steaming and culinary methods other than baking; that of England and France, while perfectly adapted to the mild, moist climate of those countries, gives poor results in the New World. Those of Minnesota, Winnipeg, Oregon and California leave absolutely nothing to be desired. Occupying a middle ground between those of Italy and England, they can be applied to every purpose, and at the same time produce bread, cake and pastry which cannot be equaled, much less excelled. It is this which enables the Californian to sell his flour in China and Japan, the St. Paul and Minneapolis miller to control the markets of South America, and the grain warehousemen to set the prices of the staff of life in Liverpool, London, Bremen and Hamburg. While native genius in the application of science and labor saving appliance has had much to do with the result, most is due to the intrinsic excellence and superiority of American wheat and flour.

III

In the conversion of wheat into flour that system is best which preserves all the food elements of the former. All wheat contains bran beyond the four ingredients named. Despite the assertions of zealots who mix bran with flour, and call the horrible mixture by some high sounding and hygienic name, the exterior coating of the wheat kernel is nearly always indigestible by the human stomach, and whether digestible or not, acts in every case as a mechanical irritant of the worst sort. Gastritis, enteritis, dysentery and other stomach disorders are among the results of using bran as a food. The Chinese government issues a vast compendium of cooking, designed for times of famine, with instructions how to utilize all vegetable and animal matter. In this work, bran is officially classified as a dangerous or semi-poisonous material unfit for eating. In times of famine, the bran is to be boiled to a pulp and strained through a cloth before it is available for food.

Many Graham, wheat, oat and rye flours are extremely dangerous on account of the bran and woody fibre they contain. Upon adults, their effect may not be quite so objectionable, but they often act as irritating aperients Upon children, invalids and people of a weak digestion, they act medicinally with more or less energy and in numberless cases produce sickness and suffering. Unfortunately flours of this class are the consequence of the teaching of health reformers, and are identified in the public mind with hygienic science. On this account they are too often used by the very persons to whom they are the most injurious.

On the other hand, all flours from which the gluten, oil and mineral elements have been removed, leaving behind powdered starch and nothing more are equally objectionable. They produce beautiful pastry, so much so as to receive the title of fine "pastry flour," but are deficient in all the constituents demanded by health and strength.

A person whose diet was restricted to foods made from such flours, would slowly starve and sicken to death. His teeth and bones would crumble, his muscles atrophy, his brain and nerves refuse to act, and finally scurvy in its most malignant form would put an end to his sufferings.

In the popular desire to have artistic cooking, health considerations are greatly overlooked. Nearly every family thoughtlessly uses these pastry flours too much and too often. In pie crust for the dessert or the pastry work for a paté, they may be allowable. But they should *never* be used in making bread or biscuit. The only flours that should be used are those made by any of the great modern processes from the best grades of wheat. These are exquisitely fine, sweet and pure, free from bran and other forms of woody fibre on the one hand, and containing all the gluten, oil and mineral matter and other life making constituents on the other. They will support the manual laborer, and are just as acceptable to the palate and stomach of a sickly child. Their use means health, strength and vigor.

IV.

In the leavening of flour, all systems which produce enough carbonic acid to lighten the bread, but which do not produce *any other gas*, nor induce any serious chemical change in the process, nor leave an unpleasant taste or odor are good. Others vary from being unobjectionable to being very deleterious. Yeast, the oldest known system on the earth is superseded only by a purely prepared flour, as the latter produces instead all the required lightness without fermentation, and hence preserves at least seven per cent. of the nutritive qualities of the grain, which are lost when yeast is used.

Many of the baking powders and prepared flours which flood all our markets, contain alum, terra alba and many detrimental if not poisonous elements, and should be suppressed by law. Bread and biscuit made from prepared flour, free from all injurious ingredients, and manufactured from best wheat is a product superior to that made by any other process. It makes a light, sweet and porous loaf, and exerts no influence but what is good. Of the prepared or self raising flours, the standard is the Imperoyal, manufactured solely by M. D. Stevens, New York City.

This flour is milled by the modern rolling process from the hardest and finest Minnesota wheat, is absolutely free from bran, husk and woody fiber, and contains all the glutenous and saline constituents of the kernel. The raising is accomplished with freed carbonic acid gas without alum, tartaric acid, or any other unhygienic material of any sort. It requires no time, no skill, and, in fact, no previous knowledge. With it the most unsophisticated old bachelor can turn out good bread, toothsome rolls and delicious cake. It has been examined and tried by prominent chemists and physicians, health authorities and distinguished *chefs de cuisine*, and in every case been highly praised and recommended. It has been used by over three hundred thousand people, and has never yet failed to give satisfaction, much less provoke complaint. It is offered to the public in the confident belief that purity, healthfulness, economy of time, space and trouble and high excellence of results will be as much appreciated in regard to the kitchen and the dining room as they are in every other field of life.

RIGHT HERE IN NEW YORK.

WHAT YOUR FRIENDS AND NEIGHBORS SAY ON A MATTTER OF VITAL IMPORTANCE.

Below will be found a sample of the multitude of letters of encouragement Messrs. H. H. Warner & Co., of Rochester, N. Y., daily receive. The subjoined unsolicited testimonials are from your friends and neighbors, ladies and gentlemen you know and esteem for their honor and straightforwardness, and who would scorn to be a party to any deception. What has been done for others can be done for you, and it is folly, nay suicidal, to longer suffer when the means of recovery lie at your very door.

NEW YORK CITY (253 Fifth Ave.)—It gives me pleasure to express my faith in the virtue of "Warner's Safe Cure," which is the only medicine I ever take or recommend. Six years ago I received the most pronounced benefit from its use at a time when suffering from mental overwork, and I have subsequently in my travels as a public lecturer recommended it to many people and personally know of several cases where "Warner's Safe Cure" has succeeded when the doctors failed. Although a perfectly well woman, I take several bottles every spring just as I take additional care in the selection of tonic-giving food at this season, believing in the ounce of "prevention" rather than the necessity for the pound of cure, and in every instance "Warner's Safe Cure" has the effect to give new energy and vitality to all my powers.

Annie Jennes Miller

Editor and Proprietor of "Dress" Magazine.

BROOKLYN, N. Y. (263 Sumner Ave.), *Dec.* 17, 1887. —I can truly say that your medicine has done our family a great deal of good.

F. Irving Bond

BROOKLYN, N. Y. (30 Irving Place), *Dec.* 3, 1887.—Our folks praise "Warner's Safe Cure" very highly, in fact could not do without it.

J. W. Dean

BROOKLYN (248 Raymond St.), *May* 5, 1885.—About ten years since, I was taken very sick, and the doctors said I had Bright's Disease and could not last very long. I suffered severely and for quite a long time. I then appeared to improve some and got around, but soon relapsed into the same condition as before, and so it went on for a long time, always suffering, never well—miserable and despondent. At last a friend, member of the same lodge, F. & A. M., persuaded me to try "Warner's Safe Cure," which I did, and very soon experienced relief. I continued steadily with it for some months, much to the disgust of my physician, an old school allopath, and now having discontinued the use for more than a year, feel better than for years past. In fact, I have no symptoms of anything being wrong with my kidneys, no pain, the water flowing freely without pain, of a good, clear color, free from sediment and normal in quantity. Furthermore, I am now free from those distressing pains in the loins, which at one time were ever present, no matter what position I might be in, sitting or standing, in bed or the easy chair. In fact I feel to-day that "Warner's Safe Cure" has cured me of a very serious complaint, not only for the time being, but permanently. It is now more than a year since I took the last bottle of "Warner's Safe Cure," and since that time I have not attempted any kind of diet, but have eaten and drank tea, coffee or anything else I might desire, and to-day am feeling better, weigh more, have a better appetite, am altogether a different man to what I was ten years ago.

Thos R. G. Mills

CUTANEOUS TROUBLES.

With the advent of warm weather in the American latitudes (and, strange to remark, the same spring-summer climate prevails over the entire United States, owing to the isothermal lines of the continent), there follows a mild physical disturbance, which, in a vast number of cases, expresses itself in pimples, rashes, eczema and other dermal disorders. Infants and children are the first to experience the physiologic change, The former begin to chafe in the groin and the armpit, under the chin, and frequently on the abdomen. Without prompt and careful nursing, rather than treatment, the chafing passes into painful sores, and sometimes, in extreme cases, into ulcers. Boys and youths, on account of their active life and out of door sports, suffer much less. With them the disturbance takes the form of pimples, cat boils and eruptions on the limbs. If the exercise be very severe, boils and even carbuncles put in an appearance. This is especially the case with young athletes who indulge excessively in foot-ball, base-ball and rowing. Girls and young women are more sensitive and suffer much inconvenience. In some instances the face breaks out in pimples, redness or rash. With all, there is a general disposition toward irregularly distributed red spots, to slight exudations of lymph on the scalp, and upon any part of the body, if abraded, to dandruff, oiliness of the face, falling out of the hair, drying and cracking of the skin and similar ills.

While none of these disorders are serious, yet they indicate an unhealthfulness of the system, which if not taken in time will lead on to graver and even more critical forms of disease. The meaning of these cutaneous troubles is exceedingly simple. Each and all imply the existence of humors in the blood, which Nature, unable to expel them in a normal manner, is endeavoring to remove by means of the pores and glands. They accordingly represent two things—one the existence of impurities in the system, which are inimical to health; and second, the weakness or impaired activity of the excretory functions. It is obvious that common sense can promptly and thoroughly cope with the trouble. All that is needed is a simple system of treatment which will purify the system on the one hand, and stimulate the devitalized functions on the other. Exercise, fresh air, sunlight, moderate clothing, regular hours and bathing are what Nature contributes to the intelligent treatment demanded in the premises. Science and art contribute Ayer's Sarsaparilla, which combines in itself a perfect blood purifier, a constitutional tonic, and a gentle, but powerful alterative. It is not any secret preparation, but a simple scientific combination of the best alterative substances recognized by the medical faculty, whose formula is published broadcast by its distinguished manufacturers. Its action is twofold. It stimulates the excretory functions and invigorates all those which are accretive and vital. Under its influence the liver, kidneys and spleen act with more regularity and thoroughness and regain the normal tone of health. The blood is acted upon immediately and renews the expulsion of all its humors through the natural channels. All the cutaneous troubles begin to decline and in a short time disappear, leaving bright eyes, a clean tongue, a handsome complexion, an undisfigured body, and a general improvement of the whole system. Deeper than this, if taken in time, Ayer's Sarsaparilla will prevent as well as cure, and may so be utilized as to keep the system in perfect health through all the changing and changeful seasons of the year.

THE OFFSHOOTS OF AN OLD HOUSE.

One of the oldest establishments for the sale of medicines is that of Theodore Metcalf & Co., in Boston. It was originally started in 1837 by Mr. Theodore Metcalf. In 1839, Mr. Joseph Burnett, the senior member of the well known firm of Joseph Burnett & Co., the extract manufacturers of Boston, became a clerk in the house of which in 1845 he became sole proprietor by purchase. In 1855 he sold the establishment back again to Mr. Metcalf who has ever since retained the principal ownership in it. He has now an active able assistant in his partner, Mr. Davidson. If one were asked the secret of success of this establishment, the truthful answer would be that it was the honest and conscientious attention to the minutest details. Notwithstanding the magnitude of the business done, including the manufacture of hundreds of pharmaceutical preparations and perfumery articles, there is not a drug store in Boston or perhaps in any other city where a larger number of physicians' prescriptions are daily prepared, and all this work is done literally under the personal supervision of one of the partners.

Mr. Joseph Burnett when he sold out his interest to Mr. Metcalf started in the manufacture of his now world renowned special preparations, such as flavoring extracts, cocaine for the hair, extract of ginger, etc., for which a demand was created by his making them for customers and one recommending another. This business has now grown so that its volume now exceeds that of any similar establishment in the world. The secret of success here has also been strict integrity, and a determination never to yield quality to price. One illustration will show this essence of ginger, so called, really a miserable tincture of cayenne paper, is sold now for seventy-five cents a dozen, but Burnett's essence of ginger sells for three dollars a dozen. The magnitude of the business can best be judged from the fact that one extract alone, essence of vanilla is made in one vast room filled with huge vats reaching from floor to ceiling.

Among other notable offshoots of the old house are the celebrated houses of Doliber, Goodale & Co., the manufacturers of Mellin's food, Hood, the sarsaparilla man, Kelly & Durkee. It must be a source of pride to Mr. Metcalf to be the father sf such houses.

OUR CHEWING GUM.

HOW PENNY-A-LINERS IMITATE MR. JUSTICE DOGBERRY.

Every now and then an imaginative reporter discovers some scientific mare's nest, and makes ridiculous both himself and the paper to which he is a contributor. The latest exhibition of ignorance compounded with phantasy is an article which appeared in a late issue of the *Mail and Express*, entitled, "Do the Girls Know This?" in which the unknown author indulges in a mysterious and lurid tirade upon chewing gum, which would have been soul harrowing were it not so ludicrously false and foolish. In the "screed" the guileless scribe says:

"What is chewing gum made from?" repeated a very large producer in Brooklyn of the now almost universally used substance to a reporter for the *Mail and Express*. "That is one of the secrets of the trade, and we have no desire to give it away. Suffice it to say, there are few only who know its original foundation, for that is disguised completely in the confections which are placed around it."

This reply only excited the curiosity of the reporter, and while looking out of one of the windows of the works he noticed a large truck, bearing on its side the name of a well known candle manufacturer in New York. The truck was heavily laden with bags of some kind of substance evidently intended for use in the works. This substance delivered at the chewing gum factory was the refuse of petroleum after the kerosene oil had been extracted. The informant said:

"The crude petroleum is pressed until the black oil is extracted. This is refined and produces paraffine and subsequently kerosene, which can also be further refined. The refuse is a yellow scale, which can be made into hard paraffine wax, used in the manufacture of candles. The same yellow scale, can, by a process known to the chewing gum makers, be made into a soft wax which will yield easily to the action of the teeth. It is of such a peculiar nature when thus prepared that, if once chewed upon, it will almost involuntarily cause the person in whose mouth it may be to continue the work of mastication."

"But kerosene oil has a nasty taste and smell, while chewing gum has not."

"True; but you must remember that the oil has been squeezed out, or at least the greater part of it. If you were to take the yellow scale as it first comes from the press, it would doubtless have some of the same taste and smell that you speak of, but after it has been subjected to several processes, and artfully hidden under the essences contained in the confections which cover the chewing gum, few would recognize the yellow scale or refuse of the petroleum."

As a matter of fact, chewing gums are chiefly made from the general class of vegetable substances known as resins, including oleo-resins, gum resins and balsams. Poorer and cheaper kinds are made from wax, paraffine, stearine, dextrine and stearic acid. Of the resins employed the best are gum chicle, brown resin, mastic, Burgundy pitch, spruce gum, fir gum, Canada balsam, sumbrel root, myrrh, frankincense, gum benzoin, balsam of Peru and balsam of Tolu. All of these are "sticky," elastic, antiseptic, insoluble in water, fragrant and even palatable. Their use promotes the secretion of saliva, and, according to Professor Ogden Doremus, increases the formation of ptyalin, its fermenting principle.

Their influence upon the assimilative system is when used in moderation very beneficial. In cases of dyspepsia and indigestion arising from malarial sources, they are often of the highest value, the camphoric acid and essential oils which in small quantities enter into their composition acting as mild stimulants and gastric tonics. This is particularly the case with the gum-chicle and spruce-gum;—these two subtances making up one-third of all the chewing-gums used upon the American continent. Of the long list headed by the favorite "Tutti-frutti," through the familiar malt, perpermint and tolu, the former is the chief ingredient. In the less popular brands and especially these used in smaller towns, spruce-gum is the chief constituent. So much for the elements of chewing-gum, so graphically misdescribed by our friend the *Mail and Express*.

When it comes to chemistry, the writer of that worthy journal gets beyond his depth and becomes pitiable. He assumes that paraffine is some kind of petroleum refuse and that paraffine-wax (*sic*) is some mysterious poison which the wicked manufacturer utilizes in chewing-gum at the expense of the welfare of his customers. As a matter of fact, paraffine is a definite chemical compound, made by distillation from petroleum, pump-wax,

rock-oil, bituminous shali, coal-tar, wood-tar or in short almost any and all organic matter. It has no more relation to refuse than the antiseptic carbolic acid, the brilliant analine-dyes, the anesthetic rhigolene or any of the invaluable compounds which chemistry has evolved in the study of organic changes. Even in those cases where paraffine is used, there is and can be no harm done. The etymology of the word (*parum*, little; *affinis*, affinity) shows this by inference. The word is as every tyro in science knows, vastly smaller than the fact. Paraffine is absolutely inert in every respect. If swallowed by mistake, it passes through the system without affecting the most delicate tissue or organ. Its conduct in this regard is equalled by that of the gas nitrogen to the lungs. Possibly the article in the *Mail and Express* is a childish shot at Adams & Sons, the largest chewing-gum manufacturers in the world. If so it falls very wide of the mark, as their preparations are made of gum-chicle and no other resin or corresponding substance. All of these have been thoroughly analyzed by the chemists attached to the AMERICAN ANALYST and have been found pure, pleasant, well-made and hygienic.

LOCAL BLINDNESS.—Seven varieties of fishes examined by naturalists of the Challenger expedition have been found to be totally blind in the deep sea, but can see when inhabiting shallow water.

IRISH AGE.—In 1841 only 4.3 per cent. of the population of Ireland were over 60 years old. In 1871 the percentage over 60 was 10.6. In England the percentage over 60 in 1841 was 7.2 and in 1871 it was only 7.8.

FLEAS AD INFINITUM.—There are in all seven species of parasites known to prey on the Hessian fly. Miss Ormerod, an English woman, famous for her insect knowledge, has hatched them out and classified them.

BALLOON ASCENTS.—The highest recorded balloon ascent was by Glaisher and Coxwell from Wolverhampton, England, on September 5, 1862. They rose to the height of 7 miles. According to Glaisher in 3,500 balloon ascensions only 15 deaths have occurred.

A LARGE HOSPITAL.—The hospital in Seventh avenue, Brooklyn, the gift of George I. Seney to the Methodist Episcopal Church, was dedicated December 15. With the exception of the Johns Hopkins Hospital in Baltimore, the Seney Hospital, it is said, will be the largest and best equipped in the world. Mr. Seney originally gave two hundred thousand dollars to found the institution in 1881, but he expended in all the sum of four hundred and ten thousand dollars.

CREMATORIES.—There are twenty-two crematories in Europe, of which ten have been built within the past year. There have been six hundred incinerations in Germany and eight hundred in Italy. There are seven crematories in the United States and six in process of construction.

THE SICK EMPEROR.—Sir Morell Mackenzie examined the throat of the Crown Prince with an electric lamp. The lamp is appended at the end of what looks like a long, slender penholder, and the proportionately small battery which supplies the electricity is worn about the examining surgeon's neck.

INSECT LANDSCAPE.—A wonderful landscape on exhibition in Paris has been executed in European and foreign insects. Every desired tone is supplied by 45,000 coleoptera in the foreground, and 4,000 varieties of the insect tribes for the remainder of the pictures. The work required four years of the artist's time.

QUEER STATUES.—Near the Ponte Fabricio, in Rome, the river-bed has yielded a great quantity of terra-cotta busts, many of which have openings and show within rude representations of the lungs, heart, etc. They are considered dedicatory gifts in thanks for a return to health, perhaps once placed in a temple of Apollo.

INTERESTING TOP.—In a new and curious experiment a dish of iron, with a spindle through it so that it can be spun like a top, is attracted by the poles of a magnet when at rest or moving slowly, but is repelled by the magnet when spinning with sufficient velocity. The reaction of the induced currents exceeds the magnetic attraction.

SWALLOW MIGRATIONS.—Mr. W. Mattieu Williams thinks that the instinct which guides the swallow southward in autumn is probably of a very practical and unpoetic kind. Its food is chiefly flying insects, the development of which ceases with the advance of cold from the north, and in migrating the bird is simply following its retreating food supply.

THE END APPROACHING.—From various calculations it has been estimated that for the future we cannot reckon on more of solar radiation than 20,000,000 times the amount given out in a year at present. Taking into consideration the gradually diminishing radiating surface, the conclusion has been arrived at that the sun cannot give out sufficient heat to support life on earth after the lapse of 10,000,000 years.

PREHISTORIC ALTARS.—There has recently been discovered in the high Alps, near the summit of the great St. Bernard, five large granite altars and numerous other relics of the stone age, used in pagan epochs for sacrifices. Swiss scientists consider this discovery a proof that Mount St. Bernard was a place of sacrifice in pagan times, and that the canton of Valais must have been inhabited by human beings as far back as the stone age.

SOMETHING WRONG.—A chemist has discovered that a ton of coal contains 1,500 pounds of coke, 20 gallons of ammonia water and 140 pounds of coal tar. There is something wrong with this analysis, for it says nothing about the slate quarries, land slides, limestone ledges and short weight which take up so much room in an ordinary ton of coal. The chemist must have purchased cheap coal which did not have the modern improvements. He should try again.—*Chicago News.*

THE ANCIENT GREEKS.—Professor Trent of Johns Hopkins University, lecturing to Baltimore workingmen, has been impressing the fact that there is nothing new under the sun. There were tenement-houses, he says, in ancient Athens, with many families in one house; there were corners in the iron market and in the olive-oil industry then, manipulated just as are Wall-street corners now; and there were slave-insurance offices, where the old Greek, for about one dollar a year could be insured against his slaves running away.

DYNAMITE EXPLOSION.—Dynamite is so instantaneous in its action, that a green leaf can be compressed into the hardest steel before it has time to flatten. One of the experiments at the United States Torpedo Works was to place some leaves between two heavy flat pieces of iron, set them on a firm foundation, and see what gun-cotton would do in forcing the iron pieces together. A charge was placed upon them by compressing the gun-cotton into a cyclindrical form about one inch thick and three or four inches in diameter, through the center of which a hole is made for a cap of fulminate of mercury, by which the gun-cotton is exploded. The reaction was so great, from nearly being exploded in the open air, that one of the iron pieces was driven down upon the other quick enough to catch an impression of the leaves before they could escape.

Horsford's
ACID PHOSPHATE.

Prepared according to the directions of Prof. E. N. HORSFORD.

ESPECIALLY RECOMMENDED FOR

Dyspepsia, Nervousness, EXHAUSTION, Headache, Tired Brain

And all Diseases arising from Indigestion and Nerve Exhaustion.

This is not a compounded "patent medicine," but a preparation of the phosphates and phosphoric acid in the form required by the system.

It aids digestion without injury, and is a beneficial food and tonic for the brain and nerves.

It makes a delicious drink with water and sugar only, and agrees with such stimulants as are necessary to take.

Dr. E. W. HILL, Glens Falls, N. Y., says: "An excellent remedy for atonic dyspepsia, nervous and general debility, or any low state of the system."

Dr. D. A. STEWART, Winona, Minn., says: "Entire satisfaction in cases of perverted digestion, loss of nerve power, mal-nutrition, and kindred ailments."

Dr. G. H. LEACH, Cairo, Ill., says: "Of great power in dyspepsia and nervous prostration."

Descriptive pamphlet free. **RUMFORD CHEMICAL WORKS, PROVIDENCE, R. I.**

BEWARE OF SUBSTITUTES AND IMITATIONS.

LEA & PERRINS' SAUCE.

Lea & Perrins', the original and genuine Worcestershire Sauce, has been before the public over a half a century. Like all popular favorites it has long been the standard of comparison and the pattern for counterfeiters who not being able to imitate its excellence offer to the public imitations in bottling, labels and style of putting up. They dare not counterfeit the signature of Lea & Perrins which is on the red label of every genuine bottle, and of which this is a facsimile.

Lea & Perrins

To be sure of obtaining the genuine article, see that the above signature is on the label.

POISONOUS FISH.—The exhibition of fish recently opened at Havre, France, includes many poisonous varieties, some of which are poisonous when eaten, others merely venomous. In the Japan seas is found one of the former class, which is sometimes used as a means of suicide. It brings on sensations like those produced by morphia, and then death.

LIVE PEOPLE

Get on in the world; they look out for the good chances; they go in and win. Stinson & Co., Portland, Maine, need live people everywhere to work for them. $1 per hour and upwards easily made; many make more than double that. Either sex, all ages. You can do the work and live at home. No special ability required; all can do it. Write and see. All will be put before you free; then if you conclude not to go to work, all right. Capital not required, Stinson & Co., start you.

ANALYSIS OF GAS.—Analysis of natural gas shows the proportion of each constituent in 100 parts of the gas to be as follows: Carbolic acid and carbonic oxide, 6-10 each; oxygen, 3-10; oleflant gas, 1; ethylic hydride, 5; marsh gas, 67; hydrogen, 22; nitrogen, 3.

DIPHTHERIA.—Dr. Ezra M. Hunt, Secretary of the State Board of Health of New Jersey, is credited with thinking that much of the diphtheria which breaks out in New Jersey in the fall is due to the damp cellars which are suddenly heated at that season of the year. The presence of decayed vegetable matter in cellars adds to the danger, it is thought.

ANALYZE "MONON" Resolutions!?

Whereas, The Monon Route wishes to make known to the world that it has the finest system of Pullman Buffet Sleepers and Chair Cars, running between Chicago and Louisville, or Chicago, Indianapolis and Cincinnati;

And Whereas, This makes it in fact the double connecting link of Pullman travel between the winter cities of Florida and the northern summer cities; then

BE IT RESOLVED, That, before starting on a trip, be sure and address E. O. McCormick, Gen'l Pass. Agent, 185 Dearborn Street., Chicago, for rates, etc.

J. Chalmers Robertson, M. D., relates the case of a family who were poisoned by eating moldy bread. The symptoms were diarrhœa and pain in the epigastrium.



FACIAL BLEMISHES.

the Largest Establishment in the World for their Treatment. Facial Development, Hair and Scalp, Superfluous Hair, Birth Marks, Moles, Warts, Moth, Freckles, Wrinkles, Red Nose, Acne, Pimples, Bl'k Heads, Scars, Pitting, etc., and their treatment. Send 10c. for book of 50 pages, 4th edition.

Dr. JOHN H. WOODBURY,
37 North Pearl St., Albany, N. Y.
Established 1870. Inventor of Facial Appliances, Springs, etc. Six Parlors.

POLICE DEPARTMENT,
CITY OF NEW YORK.

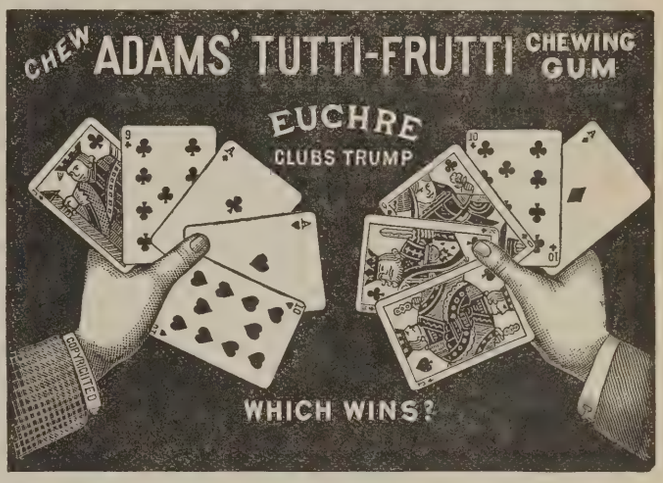
MESSRS. ADAMS & SONS:

It gives me pleasure to add my testimonial, in behalf of your "TUTTI FRUTTI" CHEWING GUM, to your collection.

Superintendent Murray and myself were *recommended by Dr. CYRUS EDSON to try your Gum for a form of indigestion* from which we were suffering. At first it seemed to us a ridiculous remedy, but I am happy to say that its effects thoroughly justified the Doctor's recommendation.

I would add that I have rarely taken a more pleasant medicine.

Yours, very truly,
HENRY V. STEERS,
Inspector of Police.



BOVININE, BUSH'S FLUID FOOD,

Is the ORIGINAL and ONLY preparation of RAW FOOD that does not become putrid and disgusting in a short time.

A MOST WONDERFUL NUTRIENT.

The vital principles of Beef and Mutton concentrated. A highly condensed Raw Food Extract. Acceptable to the most delicate taste and smell. Retained by delicate stomachs that reject all other foods. It assimilates more readily than any other food known to the medical profession. Bovinine under the microscope shows the blood corpuscles in their normal condition strongly marked, while in other foods or extracts this vitally important element is destroyed by the action of heat in cooking.

Containing 26.58 Per Cent. of Soluble Albuminoids,

According to OSCAR OLDBERG, Ph.D., Professor of Chemistry and Toxicology, and Dean of the North-Western College of Pharmacy.

A. L. LOOMIS, M. D., Professor in Medical Department of University of New York, says: "I prescribe Bush's Fluid Food or BOVININE, and prefer it to similar preparations."

J. S. JEWELL, M. D., Chicago, says of Bovinine: "I am delighted with it; it is what I have been looking for these twenty years, and it supplies a want that nothing else has been able to fill."

DRS. WARD and FRED. SMITH, speaking for themselves and their colleagues of the Hospital of St. Barnabas, Newark, say: "Bovinine was readily taken by the patients, was easily retained, and in many cases by stomachs which had rejected all other forms of nourishment. We believe Bovinine contains more nutriment, relative to the bulk, than any other preparation known to the medical profession."

"During the last four months of his sickness, the principal food of my father, General Grant, was Bovinine and Milk; and it was the use of this incomparable food alone that enabled him to finish the second volume of his personal memoirs.—FRED. D. GRANT."

October 1st, 1885.

Carefully prepared from the formula of the late James P. Bush, by the J. P. Bush Manufacturing Co., 44 Third Avenue, Chicago, Ill.

PUT UP IN 6 AND 12 OUNCE SIZES, AT 60c. AND $1.00 PER BOTTLE.

For Sale by all Druggists.

Principal Office, 2 BARCLAY STREET, NEW YORK CITY

SILK AND SATIN RIBBONS FREE!

LADIES, THIS IS FOR YOU!



A rare gift for the ladies. Save much money and secure the best! Every lady knows and appreciates, the privilege of having a few remnants of ribbon, handy for the thousand and one tasty and useful purposes for which such goods are used, and which they, the ladies, use to such advantage. To purchase what is wanted at the usual prices such goods are sold for, would create a large bill of expense, and therefore debars a great many from indulging their tastes in this direction. Realizing that there were thousands upon thousands of remnants of ribbons among the large importing houses of America which they would be willing to dispose of in bulk, for a small fraction of their cost, to any one capable of purchasing largely, we instituted a search, resulting in our obtaining the entire stock of **Silk** and **Satin Ribbon Remnants** of several of the largest of these houses, who imported the finest goods. These goods may be depended upon as superior to anything to be found, except in the very best stores of America. Yet they are given away **free;** nothing like it ever known. A grand benefit for all the ladies; beautiful, elegant, choice goods absolutely **free.** We have expended thousands of dollars in this direction, and can offer an immensely, varied, and most complete assortment of ribbons, in every conceivable shade and width, and all of excellent quality, adapted for neck-wear, bonnet strings, hat trimmings, bows, scarfs, dress trimmings, silk quilt work, etc., etc. Some of these remnants range three yards and upwards in length. Though remnants, all the patterns are new and late styles, and may be depended on as beautiful, refined, fashionable and elegant. **How to get a box containing a Complete Assortment of these elegant ribbons Free. The Practical Housekeeper and Ladies' Fireside Companion,** published monthly by us, is acknowledged, by those competent to judge, to be the best periodical of the kind in the world. Very large and handsomely illustrated; regular price 75 cts. per year. Send **35** cents and we will send it to you for a trial year, and will also send **free** a box of the ribbons; 2 subscriptions and 2 boxes, **65** cts.; 4 subscriptions and 4 boxes, **$1.** One-cent postage stamps may be sent for less than $1. Get **3** friends to join you thereby getting 4 subscriptions and 4 boxes for only $1; can do it in a few minutes. The above offer is based on this fact:—those who read the periodical referred to, for one year, want it thereafter, and pay us the full price for it; it is in after years, and not now, that we make money. We make this great offer in order to at once secure 250,000 new subscribers, who, not now, but next year, and in years thereafter, shall reward us with a profit, because the majority of them will wish to renew their subscriptions, and will do so. The money required is but a small fraction of the price you would have to pay at any store for a much smaller assortment of far inferior ribbons. Best bargain ever known; you will not fully appreciate it until after you see all. Safe delivery guaranteed. Money refunded to any one not perfectly satisfied. Better cut this out, or send at once for probably it won't appear again. Address,

H. HALLETT & CO., PUBLISHERS, PORTLAND, MAINE.

$85 Solid Gold Watch Free!

This splendid, solid gold, hunting-case watch, is now sold for $85; at that price it is the best bargain in America; until lately it could not be purchased for less than $100. We have both ladies' and gents' sizes with works and cases of equal value. **ONE PERSON** in each locality can secure one of these elegant watches absolutely **FREE.** These watches may be depended on, not only as solid gold, but as standing among the most perfect, correct and reliable timekeepers in the world. You ask how is this wonderful offer possible? We answer—we want one person in each locality to keep in their homes, and show to those who call, a complete line of our valuable and very useful HOUSEHOLD SAMPLES; these samples, as well as the watch, we send ABSOLUTELY FREE, and after you have kept them in your home for 2 months, and shown them to those who may have called, they become entirely your own property; it is possible to make this great offer, sending the **Solid Gold Watch** and large line of valuable samples FREE, for the reason that the showing of the samples in any locality, always results in a large trade for us; after our samples have been in a locality for a month or two, we usually get from $1,000 to $5,000 in trade from the surrounding country. Those who write to us at once will receive a great benefit for scarcely any work and trouble. This, the most remarkable and liberal offer ever known, is made in order that our valuable Household Samples may be placed at once where they can be seen, all over America; reader, it will be hardly any trouble for you to show them to those who may call at your home, and your reward will be most satisfactory. A postal card, on which to write us, costs but **1** cent, and if, after you know all, you do not care to go further, why no harm is done. But if you **do** send your address at once, you can secure, FREE, AN ELEGANT **$85,** SOLID GOLD, HUNTING-CASE WATCH and our large, complete line of valuable HOUSEHOLD SAMPLES. We pay all express, freight, etc.

Address, STINSON & CO., BOX 356 PORTLAND, MAINE.

N. K. FAIRBANK & CO'S

FAIRY SOAP.

A PERFECTLY PURE WHITE FLOATING SOAP.

DESIGNED EXPRESSLY TO USE IN TOILET, BATH AND NURSERY.

Admirably adapted to every requirement of the Household.

DAINTY AND DELICATE FOR ALL WASHING PURPOSES

For sale by all First-class Grocers and Druggists.

N. K. FAIRBANK & CO.,

CHICAGO, ST. LOUIS, NEW YORK, OMAHA.

OUR SPECIALTIES ARE

Choice Bottled Ciders

—AND—

Pure Cider Vinegar,

For Hotel and First-Class Trade.

T. P. ROGERS & SON,

370 to 376 Washington Street,

NEW YORK.

TORSION BRAIDED WIRE MATTRESSES

AND PILLOWS.

THE BRAIDED WIRE MATTRESS

complete in itself, requiring no hair or other mattress or spiral springs or woven bed bottom.

It cannot absorb odors, become musty or retain perspiration or disease germs, the covering being so arranged that it can be removed and washed.

It is as soft and fresh as feathers or any other material, and cannot become heated, as each slight movement changes the air beneath, while the temperature can be regulated by placing over it any desired amount of covering.

As a luxury nothing can surpass it, especially in warm weather.

No material is used that will attract bugs, moths or other insects.

No dust can be collected and retained to puff out through the covers when bedding is shaken or beaten. To secure an absolutely comfortable, sweet and pure resting place for the body during nearly one-third of the natural life which is spent in bed, is one of the most important objects of thought and care, for upon healthful sleep depend all the successes and pleasures of our waking hours.

Send for Circular.

THE TORSION BRAIDED WIRE UPHOLSTERING CO.,

No. 1017 Chestnut Street.

PHILADELPHIA, PA.

ESTABLISHED 1872.

GELATINE.

JAMES CHALMER'S SON'S

Transparent Gelatine.

PURITY—STRENGTH.

Best for Family Use.

Jellies, Blanc Mange, Etc.

ACKNOWLEDGED BY EVERY ONE EQUAL TO THE BEST.

Good Agents

To obtain Subscriptions for

AMERICAN * ANALYST

WANTED ON LIBERAL TERMS.

Natural Lithia Water.

FARMVILLE LITHIA WATER

FROM VIRGINIA.

—Not only Relieves, but—

CURES

Bright's Disease, Kidney Troubles of all Kinds, Rheumatism, Rheumatic Gout, Dyspepsia, Bladder Troubles, Diabetes, Calculi, Albuminuria. Without Taste or Odor. An Unapproachable Record in Results.

Sold by HAZARD, HAZARD & Co., Fifth Avenue Hotel, and other first-class Pharmacists. Pamphlet free upon application.

FARMVILLE LITHIA SPRINGS CO.,

Broadway, New York, and Philadelphia.

Humorous Column, Edited by S. W. FOSS, the well-known contributor to all leading American Humorous Publications.

150,000 READERS EVERY WEEK

Fancy Work Department, Edited by EVA M. NILES, the leading American authority on Fancy Needle Work Designs.

THE YANKEE BLADE

Is now in its forty-seventh year, and is unquestionably the Largest, Brightest, Handsomest and Cheapest Weekly Family Story Paper in America. The publishers of THE YANKEE BLADE are aiming for THE LARGEST CIRCULATION IN AMERICA. With this object in view they make a special offer to new subscribers Send a trial subscription, and be prepared to know what paper to order for the coming year. All who subscribe at once will receive THE YANKEE BLADE 5 weeks for 10 cents; 13 weeks for 25 cents; six months for 50 cents; one year, $1; two years, $1.75. A SUBSCRIPTION FREE for EVERY CLUB OF FOUR NEW SUBSCRIBERS. Don't misunderstand our offer. The regular subscription price of THE YANKEE BLADE is $2, but to introduce our paper everywhere it will be sent ON TRIAL during the continuance of this offer for the special prices named above. THE YANKEE BLADE can be procured through any newsdealer at 5 cents a copy. Remittances should be made in Money Orders, Express Orders, or Registered Letter at our risk. Postal Notes are no safer than bills. Stamps taken (one cent preferred) when more convenient. All Postmasters are required to register letters when requested. Address,

POTTER & POTTER, Pubs,

43 MILK STREET, Boston, Mass.

5 WEEKS —FOR— 10 CENTS

The POPULAR AMERICAN WEEKLY.

TO THE YANKEE BLADE, One Subscription Free for Every Club of Four New Subscribers, And $4. ON TRIAL, ONE YEAR.

13 WEEKS —FOR— 25 CENTS

Household Department, Edited by TREBOR OHL. Containing only authorized reports of the Boston Cooking School.

Fascinating Stories Of Adventure and Travel for Men. Stories of Love and the Family Fireside for the Ladies.

Subscriptions $1 per year. Now is the time to subscribe.

J. HENRY HENTZ. J. P. ROBINETT. J. HENRY HENTZ, Jr.

ESTABLISHED 1793.

WHITE, HENTZ & CO.,

SOLE PROPRIETORS OF

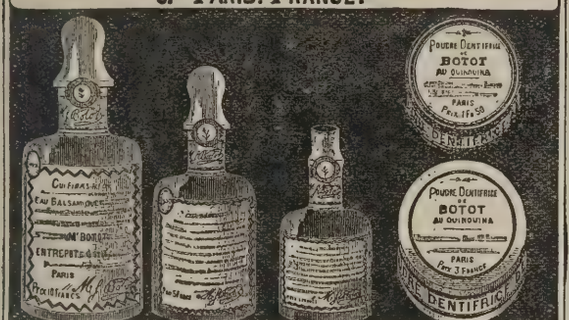
Trimble and Pennsylvania Monogram Whiskies.

222 and 224 NORTH SECOND ST., PHILADELPHIA.

D. LIEBER, 17 South William St., New York. Col. H. A. SELIGSON, 1200 Pennsylvania Ave., Washington, D. C.

THE OLDEST.

THE GENUINE EAU DE BOTOT BOTOT WATER
THE ONLY DENTIFRICE APPROVED BY THE ACADEMY OF MEDICINE OF PARIS, FRANCE.



FOR MORE THAN A CENTURY IN GENERAL USE IN EUROPE.
SOLE AGENT FOR THE UNITED STATES, FREDERIC REISET, 44 BEAVER STREET, NEW YORK.

THE BEST.

SEND

YOUR WIFE

—THE—

American Analyst.

$1.00 A YEAR.

CALIFORNIA

Fine Table Wines

From our Celebrated Orleans Vineyard.

Kreud Landsberg & Co.

Producers of the

ECLIPSE CHAMPAGNE,

530 Washington St. SAN FRANCISCO.

PARK & TILFORD, New York, C. JEVNE & CO., Chicago, } Agents.



BATES' WAIST

Mrs. E. M. VAN BRUNT,

DRESS REFORM PARLORS,

39 East 19th St., N. Y. City.

Hygienic and Artistic Underwear for Men, Women and Children.

FALL AND WINTER

Jersey-fitting Undergarments in Silk, Jaeger Wool, and Merino. In stock or made to order.

Good-Sense Waists for all ages. Breakfast Corsets, Dr. Warner's Health Corset, Jackson Waist, Mme. Clark Corset, Corset for Thin Women, Skirt and Stocking Supporters, Abdominal Bandages, Double V Waists, Sanitary Towels, Bustles, Dress Reform Waists, Comfort Waist Corsets of all brands. Send for *Dress Reform Quarterly*, mailed free. Dress Reform Patterns. Orders by mail a specialty.



ESTABLISHED 1857.

J. H. CUTTER,

OLD

BOURBON AND RYE WHISKIES.

We are the Sole Owners and Proprietors of this Celebrated Brand of Whiskey.

C. P. MOORMAN & CO. LOUISVILLE, KY.

We Guarantee the Superior Quality and Absolute Purity of every Barrel of Whiskey sold by us under this Brand.

W. P. FESSENDEN, Agent for N. E. States, Maryland and Penn., 11 Central St., Boston.

A BUSINESS BENEFIT.

ADVANTAGES TO ADVERTISERS OFFERED BY THE AMERICAN ANALYST.

It has not the limitations of a daily paper. No one reads yesterday's paper. A monthly lives at least a month, while a semi-monthly is fresh twice a month, and its audience is not limited by geographical lines, but the circulation is all over the United States and Canada.

It contains matters of interest to everyone, especially the ladies of the household, and is, therefore, sure of a careful perusal. Our audiences are intelligent and of the better classes, who have money to spend, and any well worded advertisement in our columns, giving real information, will receive a careful perusal.

Our rates are as low as our circulation affords. Large circulation and original matter cost money, and those advertisers who desire to realize these benefits must expect to pay reasonably for them.

Advertisements in our columns are permanent. Most of our subscribers bind their numbers.

Our advertisements are set up in an attractive form, sure to call the attention of the reader.

Anything that our readers want, or for which a demand is to be created, not wholly of a local nature, will pay to advertise with us.

We take only advertisements from legitimate houses of really meritorious goods, and give them all the editorial assistance they deserve; consequently our readers knowing this, have confidence in advertisements contained in our columns.

The fact that we have the best and largest houses in every branch of trade advertising with us, and that they always renew as their seasons arrive, proves beyond a doubt that they have found the AMERICAN ANALYST a good advertising medium. Why should not you?

THE FINEST MADE
COLBURN'S
PHILADELPHIA
MUSTARD
KING OF CONDIMENTS

"ROYAL" SALAD DRESSING,
PURE AND WHOLESOME.
Always Fresh, does not turn Oily or Rancid.
'ROYAL" WORCESTERSHIRE SAUCE,
The Peer of American Manufacture.

PURITY. TRADE MARK EXCELLENCE.

"CROWN" CELERY SPICES, TOMATO CATSUPS.
Pure Flavoring Extracts, Etc.
HORTON, CATO & CO.,
SOLE PROPRIETORS & MANUFACTURERS,
DETROIT, MICH.

"BILLET"
are
Carefully Selected
French Sardines,
Packed in Choicest Olive Oil.
AT ALL LEADING GROCERS.

Any Retail Druggist in the United States who desires to obtain Advertising Matter, Show Cards, Signs, etc., which will assist and instruct him in the sale of Harriet Hubbard Ayer's Recamier Toilet Preparations and Vita Nuova, should address THE RECAMIER MFG. CO., 52 and 54 Park Place, New York City.

Subscriptions $1 per year. Now is the time to subscribe.

UNEQUALLED Ask your Grocer for, and insist on having, LEA & PERRINS' Sauce, "The Worcestershire." It is known throughout the whole civilized world as the Best and most Delicious Sauce. DELICIOUS.
SCOTCH MARMALADE, Jams, Fruit and Wine, Jellies, &c.
By James Keiller & Son, Dundee.
SCOTCH BISCUITS, Albert, Water, and Oat Cake,
By Robert Middlemass & Son, Edinburgh.
RACAHOUT des Arabes, by De Langrenier, Paris.
BAY WATER, West India, (J. D. S. brand), in cases, one dozen bottles.
Sold by all first-class Grocers.
JOHN DUNCANS' SONS, 43 Park Place, New York. Agents for the United States.

WE solicit an investigation of our system and methods, and will gladly send to any one very interesting matter on the OPIUM HABIT, DRUNKENNESS and their effects and cure. Physicians specially invited to examine, and if desirous of trying our remedies, liberal arrangements will be made with them. Prompt and frank attention to correspondence. The remedies are put up safely in stout boxes and sent masked. Full directions sent.
THE LESLIE E. KEELEY CO., Dwight, Illinois.

ALTHENE SKIN SOAP
An absolutely pure and perfect soap for all purposes of the toilet, nursery, bath or sick-room. Has the approval of leading chemists and physicians, and is recommended by all who have used it. Price 25 cts. a cake, or 65 cts. for a box of three. Can be obtained of the retail druggists or from
J. W. CAMPION & CO., 916 Filbert Street,
PHILADELPHIA.

GOLD. You can live at home and make more money at work for us than at anything else in the world. Either sex; all ages. Costly outfit FREE. Terms FREE. Address, TRUE & CO., Augusta, Maine.



These Goods are "Par Excellence,"
Pure, Healthful and Reliable, warranted to give satisfaction in every particular.
For sale by wholesale and retail grocers throughout the United States. VOUWIE BROS., Manufacturers, CLEVELAND and CHICAGO.

Robert Gordon's
TRADE MARK.
SPICED · SEA · FOODS
(IN GLASS.)
OYSTERS, LITTLE NECK CLAMS, MUSSELL, SHRIMP, LOBSTER, Etc.,
Packed in 8 and 16 oz. Jars. Guaranteed to be strictly Pure.
MADE OF THE FINEST MATERIALS.
—ALSO,—
ROBERT GORDON'S CONDENSED CLAM CHOWDER,
In 3-lb Cans. Cheapest and Best in the Market.
MANUFACTURED BY
JONES, GORDON COMPANY, Limited,
204 West Street, New York.

"HUNTER'S INVISIBLE"
MEDICATED FACE POWDER.
An Exquisitely Delicate Preparation
For Beautifying the Complexion.
DELIGHTFULLY FRAGRANT. PERFECTLY HARMLESS.
Flesh, Pearl, Blonde and Brunette Tints.
The Closest Scrutiny Fails to Detect its Use!
25 CENTS EVERYWHERE. BEWARE OF IMITATIONS.

ESTERBROOK'S STEEL PENS
Leading Numbers 14,048,128 130, 135, 333, 161.
ESTERBROOK & Co. FALCON PEN
—For sale by all stationers.—
THE ESTERBROOK STEEL PEN CO., 26 John St., N. Y.
WORKS: CAMDEN, N. J.

FAT CORPUS LEAN *will reduce fat at the rate of 10 to 15lbs. per month without affecting the general health. 6c. in stamps for circulars covering testimonials. S. E. MARSH CO., 2315 Madison Sq., Philadelphia, Pa.* MADE ABSOLUTELY HARMLESS *simply stopping the FAT-producing effects of food. The supply being stopped the natural working of the system draws on the fat and at once reduces weight.* LEAN

Good Subscription Agents wanted by AMERICAN ANALYST.

NATRONA BI-CARBONATE OF SODA.

(ABSOLUTELY PURE.)

NATRONA



TRADE MARK

SODA

The nature of the raw material from which NATRONA BI-CARBONATE OF SODA is made—viz., kryolith, a mineral containing *pure sodium*—insures a purity and uniformity of product which cannot be obtained from any other known material. In making BI-CARB. SODA from any other raw material, the use of sulphuric acid is a necessity, but none is used in any part of the process of making NATRONA BI-CARB.; hence its entire freedom from the slightest trace of arsenic, which is always present in ordinary soda. Its absolute purity and entire freedom from all traces of *sulphate of soda*, common salt and other impurities, render NATRONA BI-CARB. NEARLY TASTELESS, and being bolted through the finest bolting-cloth, insures the finest stage of division.

To these indisputable facts the attention of CONSUMERS of soda is specially called. They are IMPORTANT, and should influence both those who use and those who sell soda, to buy and sell NONE BUT THE BEST.

The NATRONA BI-CARB. Soda is kept in stock by almost every wholesale druggist and grocer throughout the United States, of whom it may be ordered.

Natrona Bi-Carb. Soda is unequaled by any other brand of English or American Manufacture.

PENNA. SALT MANUFACTURING CO.,

NATRONA CHEMICAL WORKS. PHILADELPHIA, PA.

CARNRICK'S SOLUBLE FOOD

FOR INFANTS AND CHILDREN.

For Mothers, Invalids, Dyspeptics & Aged People.



THE ONLY FOOD *that digests as easily as human milk, and agrees with all infants and children.*

THE ONLY FOOD *that thoroughly nourishes the child without the addition of cow's milk.*

THE ONLY FOOD *that removes from infancy all necessity, danger and annoyance of a wet nurse.*

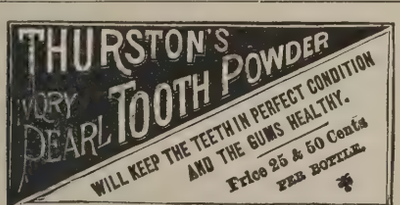
TAKEN BY MOTHERS *once or twice a day the quantity of milk will be increased and quality at once improved.*

IF THE CHILD IS RESTLESS, *change partially from nursing to* **SOLUBLE FOOD.**

DR. STUTZER, Food Analyst for Rhenish Prussia, says: "CARNRICK'S SOLUBLE FOOD is the best of all the foods I have ever examined."

"OUR BABY'S FIRST AND SECOND YEARS," by Marion Harland. Book of 64 pages, giving careful instructions for bringing up the little ones. Sent free by

REED & CARNRICK, N. Y.





GOLD MEDAL, PARIS, 18[illegible]

BAKER'S

Breakfast Cocoa.

Warranted ***absolutely pure Cocoa,*** from which the excess of Oil has been removed. It has *three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup.* It is delicious, nourishing, strengthening, easily digested, and admirably adapted for invalids as well as for persons in health.

Sold by Grocers everywhere.

W. BAKER & CO., Dorchester, Mass.

Sura Cura

ROBINSON'S SURE CURE FOR

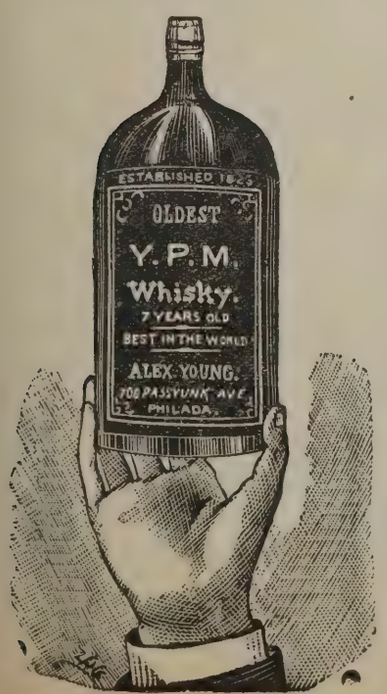
RHEUMATISM

And NEURALGIA,

And remedy for diseases arising from an impure state of the blood. An antidote for **MALARIA.** Price 50 c. and $1. Sent by mail on receipt of price. Send for Circular.

R. W. ROBINSON & SON,
184 Greenwich Street,
NEW YORK.

Sura Cura



ESTABLISHED 1823.

ALEX. YOUNG CO., Limited

DISTILLERS OF

Y. P. M. WHISKIES

DISTILLERY,

Nos. 408, 410, 412 and 414 South Street,

MALT HOUSE,

416, 418, 420, 422 and 424 South Street,

STORE,

No. 700 Passyunk Avenue.

PHILADELPHIA, PA.

ARMOUR & CO.

CHICAGO, ILLS.

PACKERS OF

Pork and Beef Products

CANNED MEATS,

ETC.,

FOR HOME CONSUMPTION AND FOR EXPORT

TO ALL PARTS OF THE WORLD.

Also,

SHIPPERS OF

Choice Dressed Beef,

MUTTON AND HOGS,

In Refrigerator Cars,

To BOSTON,
NEW YORK,
PHILADELPHIA,
BALTIMORE,

And other cities throughout the country.

GILBERT S. GRAVES

STANDARD

STARCH.

MANUFACTURED WITH ENTIRELY NEW MACHINERY AND BY LATEST IMPROVED PROCESS.

IT IS GUARANTEED to be fully equal to BRANDS SOLD AT FANCY PRICES, and MUCH SUPERIOR TO STARCH SOLD AT EQUAL PRICES.

THE MIRROR GLOSS

Is the finest Starch made for the Laundry, and cannot be excelled. It will not injure the finest Laces.

THE CORN STARCH

For culinary purposes is prepared with the greatest care, from selected Corn, and is a most delicious and wholesome article of food.

ASK YOUR GROCER FOR IT.

A DOSE OR TWO

WILL QUICKLY CURE

NERVOUS HEADACHE.



A Cure for Sick Headache.

A CURE FOR

SLEEPLESSNESS.

A CURE FOR

SEA-SICKNESS.

PURITY AGE STRENGTH

TRADE MARK.

The "Best" Tonic

A Concentrated Liquid Extract of

MALT AND HOPS.

Aids Digestion.

Cures Dyspepsia.

Strengthens the System.

Restores Sound, Refreshing Sleep.

Priceless to Nursing Mothers.

Manufactured by SPECIALTY DEPARTMENT,

PHIL. BEST BREWING CO.

Eastern Depot, 28 College Place, New York.

Recommended by Eminent Physicians.

FOR SALE BY ALL DRUGGISTS.

SWIFT'S

Choice Chicago Dressed Beef

—AND—

MUTTON.

CAN be found at all times in full supply and at popular prices at the branch houses in all the larger cities and is ***retailed by all first class butchers.***

The trade of all marketmen and meat dealers is solicited for our Wholesale Branch Houses, and the ***public may rest assured*** *that in* ***purchasing our meat*** *from dealers they will* ***always receive the best.***

SWIFT AND COMPANY,

UNION STOCK YARDS,

CHICAGO, ILLS.

Tabasco Pepper Sauce

OR LIQUID PEPPER.

Is simply the Pulp of the Ripe Pepper Extracted by Pressure.

The seed of this Pepper was obtained from Central America, and by careful cultivation in Louisiana for many years has been so improved in strength, flavor and aroma, as to have become a new variety of Red Pepper, superior to all others. The pulp is so handled as to retain all the flavor, strength, aroma and color of the ripe fruit, and to keep unimpaired in any climate. It excites the appetite, promotes digestion, and is pronounced, by connoisseurs, to be the finest condiment in the world. For medicinal purposes it recommends itself by its purity, strength and diffusible form.

Manufactured by E. McILHENNY,

NEW IBERIA, LA.

For Sale by all Wholesale Grocers.

ON THE USE OF PURGATIVES.

BY CHARLES A. HOFF, M. D., ST. LOUIS, MO.

Of all preparations contained within the *pharmacopœia,* there are none, apparently, held in higher esteem by mankind than that class of medicines, commonly known as purgatives. The busy practitioner confidently prescribes them with variable frequency, singly and combined, from the date of the writing of his very first prescription to that of his last; and the corner druggist rarely sees a day pass over his head on which he does not greet the customer who has called around to get "something to act upon his bowels." Indeed, the inevitable purgative awaits the tiny baby screaming in its first attack of colic; it is resorted to by the invalid weighted down with years of suffering and disease; and it is by no means despised by the individual in robust health, when assailed by the various petty ills, which even the most vigorous seldom entirely escape.

Notwithstanding the fact that purgatives are so generally prescribed by the physician, and so frequently resorted to without advice by the patient, they are not altogether incapable of doing harm. As everybody knows, the habit of purging the system repeatedly with salines, cholagogues, hydragogues, or drastics, is a most pernicious one; and the physician who fails to exercise a proper care, both in the selection and the administration of cathartics will sooner or later bankrupt the health of his patients as well as his own hard earned reputation.

Constipation is a complication of so many disorders, a symptom of so many diseases that its treatment in different cases depends upon very different considerations. For a simple, ordinary attack, the average doctor has been accustomed to use a simple purge, such as castor oil, sulphate of magnesia, rhubarb, senna, aloes, colocynth, blue pills, etc.; yet in none of these, can it be truly said, has there been found all that could be wished for, even in so simple a matter as a laxative. Where can we find the physician who has not been vexed and annoyed at the complaints of his patients against the purgative medicines he has been accustomed to prescribe. Some people there are who can not or will not swallow pills; many object to the nauseating castor oil; not a few oppose the use of salines since they are disagreeable both in taste and effect; many look upon all resinous cathartics as objectionable on account of their so called heating properties; aloes is objected to in pills and especially in pregnancy; elaterium is said to be excessively harsh and severe, croton oil is known to be dangerous; podophyllin causes an undue amount of griping; blue mass is avoided on general principles; and so on to the end of the chapter.

Fortunately, however, the physician of the present need no longer be placed in a dilemma when called upon to prescribe a preparation free from the faults enumerated in connection with ordinary purgatives. The pharmacist has bravely come to his aid with a formula of incomparable excellence; and this preparation, a combination of "manna, purified cathartic acid and fruit juice," although but recently brought to the notice of the medical world, is, nevertheless, already regarded as a most valuable addition to the resources of medicine.

The happy thought that suggested the combination known as the Rio Chemical Co.'s Acid Mannate justly challenges unlimited admiration and esteem, and has thus far evoked from the profession an almost universal verdict of commendation and praise. Prompt, mild and certain in its action, Acid Mannate may well be considered an ideal remedy in the constipation of pregnancy. Being pleasant to the taste, and continuing its good work without increased dosage, it is pre-eminently adapted to cases of habitual constipation. Indeed, in its wide range of adaptability as an aperient medicine it is impossible to exaggerate its importance, or allude either directly or indirectly to the vast variety of its beneficial, therapeutical properties.

The importance of laxatives is probably nowhere appreciated so much as in the constipation of pregnancy; and it is to this fact, no doubt, more than to any other, that Acid Mannate owes its great popularity and fame among remedial agents. The testimony of thousands of honorable medical gentlemen leading us to believe that, through the beneficent effect of this same elegant formula, constipation need not hereafter, as in the past, be regarded as one of the most troublesome attendants upon gestation. Moreover, the atrocious female pill of unknown composition but of dire effect, which has deluged the drug market for ages, we may consider as having had its day; and it is to be hoped that, since the physician is now in possession of a purgative especially suited to the period of gestation, female life will be less frequently harassed by the ails and aches said to be peculiar to the sex; and that miscarriages, displacements, granular erosions, congestions, headaches, dyspeptic and hypochondriacal attacks, and the whole long train of aches, pains and nervous ills will grow less familiar to the medical profession in the same ratio that the physician increases his familiarity with the actions of Acid Mannate.

A full sized bottle of Acid Mannate will be sent free to any Physician who desires to test it, if he will pay the express charges and mention this Journal, on application to the

RIO CHEMICAL CO.,
St. Louis, Mo

GORDON & DILWORTH

MANUFACTURING PURVEYORS

Established 1847

ALIMENTARY PRODUCTS

ALL OF OUR PRODUCTIONS BEAR THIS TRADE MARK

WE WILL PROSECUTE ALL INFRINGEMENTS & IMITATIONS







CHOICE DESSERTS

OVER 100 DOMESTIC & FOREIGN FRUITS AND VEGETABLES TRANSMUTED INTO TABLE DELICACIES

PRICES ON PRESERVED FRUITS REDUCED 1ST DEC. 1885

PRESERVED, CANNED & BRANDY FRUITS, FRUIT JELLIES, VEGETABLES, TOMATO CATSUP, SYRUPS & JAMS, SALAD DRESSING, BLACKBERRY BRANDY, MINCE MEAT, PLUM PUDDING, SWEET PICKLES, OLIVES & CAPERS, WINE JELLIES, MARMALADE, SOUPS SAUCES &c.

SOLD BY THE LEADING GROCERS ON THE AMERICAN CONTINENT.

GRAND NATIONAL PRIZE OF 16,600 FRANCS.

QUINA-LAROCHE

VINOUS ELIXIR,

This meritorious ELIXIR, QUINA-LAROCHE, is prepared from the **three** Cinchonas; it is an agreeable and doubtless highly efficacious remedy.—*The Lancet.*

A STIMULATING RESTORATIVE

AND

ANTI-FEBRILE TONIC.

QUINA-LAROCHE, under the form of a vinous Elixir, contains the totality of the numerous principles of the **three** Cinchona barks. It is a preparation which renders great services to Therapeutics.—Extract of the *Gazette des Hôpitaux*, Paris.

Far superior to all Ordinary Cinchona Wines.

LAROCHE'S QUINA, tried by the Academy of Medicine of Paris, is a specially prepared Compound Extract of Quinquina, a careful analysis, confirmed by experience, has shown that most of the wines and syrups hitherto used have not contained all the properties of this precious bark, of these some, although beneficial, are altogether lost, while many preparations contain but half the properties of the bark in varying proportions.

Mr. Laroche, by his peculiar method, has succeeded in extracting all the active principles of the quinquina, combining these with *Catalan Wine*, forming an Elixir free from the disagreeable bitterness of other similar preparations. Practitioners have found triple advantages in the use of this Elixir; it is a *strong tonic*, is easily administered, and perfectly harmless, being free from the unpleasant effects of Quinine.

THE FERRUGINOUS QUINA-LAROCHE is the invigorating tonic *par excellence*, having the advantage of being easily assimilated by the gastric juice, without, in any way, deranging the action of the digestive organs, proving itself to be a most efficacious remedy in cases of impoverishment of the blood, **Anæmia, Chlorosis, Intestinal Hemorrhage, Castralgia, Exhaustion,** etc., etc.

PARIS.—22 RUE DROUOT.—PARIS.

J. Laroche

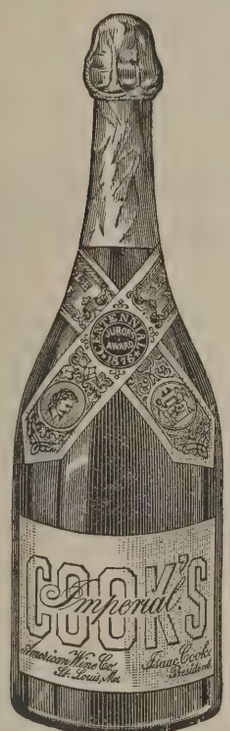
E. FOUGERA & CO., New York, Sole Agents for the United States.

D. G. Cook, Pres.

AMERICAN WINE CO.,

ST. LOUIS.

COOK'S IMPERIAL



Press House and Wine Cellars, SANDUSKY, OHIO.

Office and Salesroom, Wine House and Vaults, 3015 TO 3021 CASS AVE.

Pure Still Wines.

GREENWAY'S PORTER

—AND—

DOUBLE AND EXTRA DOUBLE STOUT.

GREENWAY'S SALE INDIA PALE

IN GLASS OR WOOD

ENGLISH TRADE MARK.

SEND FOR CIRCULARS.

FULLY EQUAL TO THE BEST IMPORTED. FOR FAMILY OR CLUB USE. RECOMMENDED BY OUR BEST PHYSICIANS FOR SALE BY ALL FIRST CLASS GROCERS AND DEALERS.

THE GREENWAY BREWING CO. SYRACUSE, N.Y.

Greenway Bottling Co.,

BOTTLERS OF

GREENWAY BREWING CO'S BRANDS OF ALE, PORTER, DOUBLE STOUT

—AND—

Germania Brewing Co's Standard Pale Crown Lager & Culmbacher.

N. Y. Depot, 31 Broadway.

ESTABLISHED IN LONDON 1831.



W. G. DEAN & SON,

—MANUFACTURERS OF—

PASTE AND STICK

LICORICE

PURE CALABRIA, Equal to the Imported

Try our SICILY (brand select).

BEST IN THE MARKET.

Also LICORICE TABLETS.

361 & 363 Washington Street,

And 84, 86 & 88 North Moore St.,

W. G. DEAN, HARRY W. DEAN. } NEW YORK

—THE—

CHRISTIAN MOERLEIN

Brewing Co.,

CINCINNATI, U. S. A.,

Brewers of the far-famed

"NATIONAL" EXPORT

(The Queen of Beers)

LAGER.

Owing to its absolute purity, beautiful pale color, fine aroma and nutritious qualities, the above beer has become the PRIME FAVORITE in all the principal hotels and clubs, and in thousands of families throughout the West and South.

Pure LAGER BEER,

"IMPERIAL" and "CULMBACHER"

Brewed & Bottled SPECIALLY FOR HOTELS, CLUBS AND PRIVATE FAMILIES

BY

Beadleston & Woerz

291 W. 10th St. New York.

Orders by Postal Card promptly attended to.

H. CLAUSEN & SON

BREWING CO'S

CHAMPAGNE LAGER BEER,

ROYAL EXPORT LAGER,

EAST INDIA PALE ALE,

EXTRA AMERICAN STOUT.

Bottled for Family Use and Export by

PHŒNIX BOTTLING CO.

888 and 890 Second Avenue,

Bet. 47th and 48th Streets

NEW YORK.

Order from your Grocer, or direct from us.

FULL WEIGHT
PURE
DR PRICE'S
CREAM
BAKING
POWDER
MOST PERFECT MADE

Its superior excellence proven in millions of homes for more than a quarter of a century. It is used by the United States Government. Endorsed by the heads of the Great Universities as the Strongest, Purest, and most Healthful. Dr. Price's Cream Baking Powder does not contain Ammonia, Lime or Alum. Sold only in cans.

PRICE BAKING POWDER CO.
NEW YORK. CHICAGO, ST. LOUIS.

MANUFACTURED BY THE

ST. LOUIS STAMPING CO.
PATENT
GRANITE IRON WARE
SOLD EVERYWHERE

PEACOCK'S BROMIDES

(SYR: BROM: COMP: PEACOCK)

NERVE SEDATIVE.

Each fluid drachm represents 15 grains of the Combined C. P. Bromides of Potassium, Sodium, Calcium, Ammonium and Lithium.

USES:—EPILEPSY, and all CONGESTIVE, CONVULSIVE, and REFLEX NEUROSES.

This preparation has stood the test of time and experience, and can be relied upon to produce results, which can not be obtained from the use of commercial bromide substitutes.

DOSE:—One to two FLUID drachms, in WATER, three or more times a day.

PEACOCK CHEMICAL CO., St. Louis.

CARL L. JENSEN'S
CRYSTAL PEPSIN TABLETS



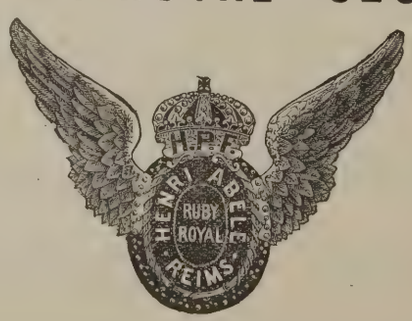
FOR DYSPEPSIA OR INDIGESTION.

CARL L. JENSEN'S CRYSTAL PEPSIN has been known throughout the world for the last ten years among the medical profession only. But a medical preparation of such high value as this could not be kept exclusively within the power of the physicians without permitting the public to become familiar with CARL L. JENSEN'S CRYSTAL PEPSIN, which they have so often seen mentioned in prescriptions from their physicians, and from which preparations they have received such gratifying results. That the public have availed themselves of this knowledge is manifested from the fact that the demand at the drug stores of late for CARL L. JENSEN'S CRYSTAL PEPSIN has become so urgent that we have been repeatedly requested by the Druggists at large to put up the PEPSIN in a more convenient form for their customers who demand JENSEN'S CRYSTAL PEPSIN without bringing a prescription. This PEPSIN, to suit the prescription department, is put up in loose Crystals or Scales, and therefore not in a suitable manner to be handled by the public. It is therefore, for the convenience of the public, prepared in tablet form, of which one or two constitute a dose, and put up in small bottles of convenient form to be carried in the pocket, each bottle containing seventy-five tablets.

CARL L. JENSEN,
SOLE MANUFACTURER,
2039 Green Street, Philadelphia, and 161 West 23d Street, New York.
KEPT BY ALL DRUGGISTS.



RUBY ROYAL "SEC."



This wine, of a bright crimson or Ruby color, possesses exceptional merit in all the characteristics of dryness, mellowness of flavor, and delicacy of fragrance. It is the only red champagne in the market, and can be tried at the Hoffman House, Delmonico's and other first-class places

Sold by the Leading Grocers.

AGATE IRON WARE

Is the Purest, Cleanest, Most Durable, and altogether the Best Ware for family use ever made. It will not rust or break like ordinary Enamels, and is absolutely pure and safe to use, as certified to by the most eminent chemists here and abroad.



Two thousand different styles and sizes of Agate cooking utensils, for family use, are sold by all first-class dealers throughout the world, and giving universal satisfaction.

Subscriptions $1 per year. Now is the time to subscribe.

AMERICAN ANALYST

FOR THE

FAMILY AND CONSUMER.

A SEMI-MONTHLY ADVOCATE OF PURE FOOD AND THE SUPPRESSION OF ADULTERATION.

Office, 19 Park Place.

[Entered at the Post Office at New York, as Second Class Matter.]

VOL. IV.—No. 11. NEW YORK, JUNE 1, 1888. Whole No. 83

CONTENTS.

Advertising Frauds 229
Answers to Correspondents 230
A Physical Conscience 231
Book Reviews 233
Cremation in England 228
Correspondence from New Zealand 228
Domestic Dietetics 233
European Appetites 233
Editorials 230
Popular Candy Chemistry—Metropolitan Crime and Whiskey—A Harmful Policy—Imitation Chocolate—Adulterated Honey—Plainer Facts About Crockery.
Foods in New Jersey 229
Helen's Escape—Concluded 232
Impure Ice 233
Investigating Adulterations 234
Rag Pickers 227
Submarine Springs 229
The Teeth, Tales of 234
The Phonograph 234
Tom Middleton's Wife, Part I 225
Tin Cans 226
Vinegar, Cheap vs. Good 235

TOM MIDDLETON'S WIFE.

THE STORY OF A PLUCKY CALIFORNIA WOMAN.

Kate Mitchell was one of those unfortunate women whose surplus physical energies distinguish them from others of their sex. As a child, she was known as a "tomboy," and prim mothers held her up as an awful warning to their little daughters, while in her own home the question of how to subdue her buoyant spirits was wrestled over with true maternal solicitude. When she grew up, society frowned upon her as a "hoydon," and her way was beset with thorns.

At eighteen she could row, and swim, and ride, and play lawn tennis like a boy. She was a great walker, and upon one occasion had walked to Mt. Diablo and back in two days, with her brother and a couple of friends, a feat which alone would have sufficed to place her under a ban in San Francisco's best society. That she sang like a bird, danced like a sylph, and was, altogether, a very amiable, pure minded girl, was a small offset for the sum of her iniquities, and although she was exceedingly popular among a set of young and irresponsible boys, conservative circles frowned upon her, and it was generally understood that she was a young person of most radical and dangerous tendencies.

It was, therefore, a matter of polite regret when the announcement of her approaching nuptials with one of this same conservative circle was received. Tom Middleton was a promising young lawyer, of excellent family and irreproachable manners. It had been generally understood that Tom's ideal was of a very different type, and more after the pattern of the elegant society women with whom he had been accustomed to associate. His intimate friend and boon companion, Jack Spencer, who had always disapproved of Kate, undertook to pose as the mouth-piece of society, and echoed its sentiments in Tom's unwilling ear. Tom stood staunchly by his colors, but his friend's words sank deep into his soul, nevertheless. He secretly resolved that, for his sake and her own, Kate must be "toned down."

He succeeded even beyond his hopes. Nine years after her marriage, few would have recognized in the quiet, repressed woman, the gay and spirited girl of former days. Kate was fond of her husband, and the alchemy of love had wrought the change; but it is a dangerous thing to meddle with spiritual chemistry as well as the forces of the material world, and if Tom had known what pent-up longings and rebellious inclinations raged beneath his wife's quiet exterior, he might have repented his success. But he went on callously and blindly, as men will when dealing with delicate forces which they cannot understand, and Kate kept her grievances to herself. Two children came—the elder a girl, a fiery, untamed little creature, who made the mother's heart ache, as she saw in the child a reflex of herself; the other, a boy, sturdy, deliberate, like his father. When the children grew larger, and needed room for exercise and out-door air, which their city home would not afford, they took up their residence in a little country home, not so far away but that Tom could travel back and forth daily and attend to his business, and it is here that our story finds them.

One gray, December day, Kate stood at her window gazing out upon the landscape. It had been a dull, tiresome week. Several days before, Tom had started off on a long promised vacation, which was to be dedicated to a hunt in the mountains, in company with a party of friends. She was thinking with envy, of this merry hunting party, and wondering, half bitterly, why amusements that were conceded to be proper and healthful for men should not be healthful and proper for women. How she would have enjoyed the long tramps over the hills, the excitement of the hunt, the joy of holding a good gun upon her shoulder, and knowing that she could sight and shoot with the best of them! She felt a wicked solace as she thought of the showers that had fallen in the valley and the clouds that had hung constantly over the mountains. She was lonely, dull, and cross, and chafed against her hedged-in life, with its narrow boundaries, its senseless restraints.

There was a rush of feet through the house, the door of her room opened, and the children burst in.

"Mamma, the creek is up! Take us down to see it!"

The childish longing for novelty and excitement found an instant echo in her heart. They had run in from out-door play, and were bonneted and cloaked, with rubber overshoes to protect their feet from the damp earth. As for her, it was refreshing to evade Bridget's vigilant eye, and to steal out of the front door in her loose house dress, bare headed, and with worsted slippers on her feet. They followed a garden path for a little distance, and then entered a narrow lane leading to a place where they were accustomed to ford in the summer time, but over which now swept a seething, tempestuous flood.

As they looked and listened, Kate realized that this was no ordinary freshet, but the product of a heavy rainfall over the whole vast watershed, which had accumulated its forces in thousands of tiny rivulets, and, joining issue with the mountain stream, plunged down its narrow channel, a mighty and irresistible power.

Even as they looked she saw a wall of water suddenly rear up above and come down toward them like a miniature tidal wave.

The dam, built by the new water company, had given way!

They ran back from the shore to higher ground, and not a moment too soon. The stream rose several feet in a second. It cut into the solid banks on either side, and bushes and young trees, rooted up and sucked in by the greedy current, went spinning by. A giant sycamore wavered, flung out its bare and skeleton limbs as if in ghostly protest, and fell far out into the stream, interlocking its branches with a sturdy evergreen oak which stood on the opposite bank, while its trunk, loosely anchored by long, snake-like roots, tossed helplessly in mid-stream.

"Mamma! See the big boards coming!" cried out her little daughter.

Kate looked far up stream and saw a great timber sailing leisurely along. Now it caught on a projecting snag and swung half about; now it struck a submerged island, and idly disengaged itself and sauntered on. Behind it was another, and yet another. The stream was black with them.

"Oh, my God! The railroad bridge!"

The railroad bridge, and the afternoon train now nearly due, soon to rush down a steep grade to a leap into that yawning chasm! Her first impulse was to start up the canon, but she instantly checked herself. What folly, when miles of overflow lay between her and the doomed train! Word must be sent down to the station, and from there a telegram to the next stopping place above the bridge. But how? The hired man, Jim had gone an hour before to the village to get the mail and have his daily gossip with the loungers of the place. Even if he were here, neither horse nor man was fleet enough to cover the circuitous road that lay between. Then she looked at the prostrate sycamore. Down the stream, leisurely, but nearer and nearer still, sailed the great timbers.

"Marian, take little brother and go straight to the house and stay there till mamma comes back."

She had already pulled herself up by one of the roots, and was creeping stealthily along the swaying trunk. Here her dress caught on a branch; there she had to climb down and crawl along with her feet under the water, to avoid an upright limb. Once she slipped and lost her hold, and was nearly sucked into the eddying current, but she caught at a stout projection and swung herself up again.

She could hear the swash of the heavy timbers upstream as they rocked lazily upon the water, but she did not dare to look. Before her the main trunk of

the tree was lost, and she saw two diverging limbs, one low in the water, the other locked with the oak in mid-air. Which to take? She dared not hesitate, but commenced a perilous climb along the upper limb, slippery and naked in places, wavering so that she grew dizzy, and shut her eyes to keep from falling. And so, lying prone upon it, hand over hand, she crept the entire length, and the great stick of timber struck heavily against the fallen sycamore, and just as Kate swung herself into the branches of the oak she felt her support give way, and with a groan and crash and wild uptossing of its skeleton arms, the old tree tore loose from its moorings, and was swept down stream toward the bay.

Her hands torn and bleeding, Kate Middleton reached solid ground at length, and first her maternal instinct asserted itself, and she looked back and saw her children standing still and looking after her. She pointed homeward with a gesture that they dared not disobey, and saw them turn and run up the lane, then sped along her way.

She was not light of foot as in her girlhood; whereas, she was once fleet as a deer, and swift motion was a very joy to her, she now realized that she was growing to be a stout and middle aged woman. She moved heavily and clumsily, and labored for breath, and her feet were like clods beneath her. There was a mile of rough and rocky ground to be covered before she reached the station, and the train—oh, but to possess once more the agility of her girlhood!

Which would be first? Would the train, flying across the upper levels of the Coast Range, reach the next station before the brave woman had sent her message of warning? How many times she asked herself the question she could not have told. She scarcely dared hope that she might be in time. Her heart seemed ready to burst with grief for the terrible misery threatening so many happy homes. Alas! for the orphaned children who might cry aloud to heaven that night! Alas! for fathers and mothers whom the morrow might behold bowed down with sorrow! Alas! for husbands and wives——

She was crossing the bed of one of the many abandoned channels of the impetuous mountain stream, a rocky pathway, strewn with the spoils of bygone freshets, where even then a shallow stream was rippling past, token of the torrent's surplus force. She faltered, smitten by a new and awful thought. What if Tom—Tom, who was not to come home for two days more; Tom, who had started out in an altogether different direction—should have cut short his excursion, or, with his party, driven home by the continued rains, somehow wandered to one of the upper stations, and boarded the train there!

Where was her vaunted physical strength now? What was she, after all, but a weak, wretched woman, with trembling limbs, every muscle clogged by this great horror that had taken possession of her, a fierce pain gripping at her heart, something rising in her throat which suffocated her, her eyes blinded with babyish tears? Thank God! her brain kept clear and true to its purpose, and urged on the flagging body. On, on, over little hillocks, across level stretches of sand, down new ravines she ran. Once she cut her foot cruelly upon a sharp stone and remembered, for the first time, that she had on the light worsted slippers she had worn in the house, and had carelessly neglected to exchange for walking boots when she started down to the creek with her children. She even bethought herself that her loose house dress was scarcely the style of apparel in which she should like to present herself at the station, could she have her choice, and in the same breath sent up a prayer of thankfulness for its light weight, which scarcely encumbered her movements.

(To be continued.)

TIN CANS.

WHAT BECOMES OF THEM IN THIS CITY.

Large numbers of tin cans of all kinds, in which foods have been contained, find their way via the ash barrels to the city garbage dumps. Here they are picked out and taken to a tin can receiver, where, after the labels and dirt are washed off, the tin and solder are melted and converted into solder sticks, the remaining sheet iron being rolled flat and sold for trunk corners, umbrella ferrules, and the scraps are converted into sash weights. There is no secret about the process. The only thing is to have a proper sized furnace and to get up a sufficient heat. The business has developed of late, but manufacturers say the margin of profit is small. It costs more to melt the scraps than common iron. Chips ready for the furnace cost $7 a ton. The sash weights produced are of a superior quality. The business is, like the case of old rubber, an illustration of the use of waste material. The tin can companies and other manufacturers of tin goods formerly dumped hundreds of tons into space, but now these scraps are utilized, and the irresponsible small boy works the ash fields to his profit in companionship with the blithesome goat.

MELLIN'S
TRADE MARK
FOOD
FOR INFANTS & INVALIDS
The Only Perfect Substitute for Mother's Milk.
A Copy of our Book,
The Care and Feeding of Infants
will be MAILED FREE to any address.
DOLIBER, GOODALE & CO.,
40-41-42-43 Central Wharf, Boston, Mass.

ASK YOUR GROCER FOR IT. USE NO OTHER.
IMPEROYAL Wheat, Buckwheat and Cereals.
M. D. STEVENS' IMPEROYAL WHEAT & BUCKWHEAT FLOUR
REGISTERED TRADE MARK
BEST IN THE MARKET.
IMPEROYAL VACUUM COOKED OATS, WHEAT AND HOMINY
AND
Griddle Cake Flour.
M. D. STEVENS' IMPEROYAL NEW PROCESS REFINED FLOURS.
Require but one minute in preparation, without Salt, Baking Powder or Yeast.
18 MERCANTILE EXCHANGE,
NEW YORK.
DIRECTIONS ON EACH PACKAGE.
Can be used for all kinds of Pastry, Bread, Biscuit, Griddle Cakes, etc., and its absolute freedom from Alum, Terra Alba, or any injurious ingredient, make it a necessity in every household. No lady can afford to be without it.
SOLD BY FIRST-CLASS GROCERS.

NESTLÉ'S FOOD
NESTLÉ'S
TRADE MARK
MILK FOOD.
IS ESPECIALLY SUITABLE FOR INFANTS IN HOT WEATHER.
Requires No Milk in Its Preparation and is Very Effective in the Prevention of Cholera-Infantum.
"Ziemssen's Cyclopedia of the practice of Medicine," Vol. VII., the standard authority, says: "In cases of Cholera-Infantum Nestle's Milk Food is alone to be recommended." Because the gastro-intestinal disorders to which infants are so subject are provided for by presenting only the *nourishing* properties of cow's milk in a digestible form. "Cow's milk produces a coagulated mass of curd or cheese, which the immature gastric juice is utterly unable to dispose of."
This is one of several reasons why infant foods requiring the addition of cow's milk fail as a diet in hot weather.
Pamphlet by Prof. Lebert and sample sent on application.
THOS. LEEMING & CO., Sole Agents, New York.

F. W. DEVOE & CO.,

ESTABLISHED 1852.

PURE MIXED PAINTS

WE desire to call attention of consumers to the fact that we guarantee our ready-mixed paints to be made only of pure linseed oil and the most permanent pigments. They are not "Chemical," "Rubber," "Patent," or "Fireproof." We use no secret or patent method in manufacturing them by which benzine and water are made to serve the purpose of pure linseed oil. Sample cards containing 50 desirable shades, sent on application.

Catalogues of our different departments to responsible parties.

FINE VARNISHES, WOOD FILLERS, WOOD STAINS.

Artist's Materials. Mathematical Instruments.

Cor. Fulton and William Sts., New York.

COFFIN, DEVOE & CO.,

179 RANDOLPH STREET, CHICAGO.

IMPORTANT

TO THE

MEDICAL PROFESSION.

Send your address to THE NEW YORK PHARMACEUTICAL COMPANY, BEDFORD SPRINGS, MASS., for Illustrative Hand-book, **FREE**, containing valuable formula, special directions, and the testimonials of one thousand physicians in favor of the great merits of

HAYDEN'S

Viburnum Compound,

IN FEMALE DISEASES.

Also, the

URIC SOLVENT,

For KIDNEY DISEASES, and complaints arising therefrom.

RAGPICKERS.

RESULT OF THE NEW YORK CHIFFONIER'S INDUSTRY.

What do ragpickers do with the rags and other waste material they pick up? To get an answer to this question a visit was paid to a rag warehouse, where the answer was readily obtained. The report reads:

"Oh, it's a great business," remarked the proprietor; "if it weren't for rags there would be no paper, you would have no Bible, no romance, no—love letters," he added in quite a courtly manner.

Of all the queer places, that warehouse! I clambered over the foot hills of rags, separated by valleys rich with old iron, zinc sheets, lead piping, brass wire, and my eye rested upon Arctic mountains in the background, perhaps I should say mountains of arctics. It seemed I touched rudely upon professional pride when I asked if that immense bulk and the many bales for shipping were brought in by ragpickers. I was informed that ragpickers are those that go about the streets and alleys or beg rags, which they usually sell to small merchants. Then there are rag peddlers who own wagons and go about among houses buying what they wish; merchants buying from both of these classes, and himself, buying mostly from them.

I asked the proprietor what under the canopy he does with all this truck, and was told he had contracts with large factories all over the country. Old metals are returned to foundries; paper and rags to paper mills, and also ropes, which are used for manilla paper; vinegar and oil barrels to be refilled; bits of leather and old boots to soap factories, where the grease is extracted for soap for my elegant ladies' white hands; old bones to sugar refineries, where, calcined, they purify sugar and syrup, or bones may be shipped for fertilizing. Old bottles are returned to brewers, etc.; new cloth rags from tailors back to cloth factories; and rubber—"gums," as the Anglomaniacs term them—to the factory in Massachusetts.

That pile of rubbers and arctics reaching to the ceiling did look odd. There were tiny baby arctics and large scows stranded side by side; those exasperating run-down-at-the-heel rubbers which people had lost in the streets, and plenty which had sprung a leak and been abandoned. You've walked from many directions, through many paths, upon feet shod in righteousness and those taking hold on hell, haven't you? They present a good illustration of reincarnation doctrines; they will be rid of the useless parts and the impurity, and their best parts sent to the factory, whence they will shortly issue again, shining and new.

I always used to deprecate throwing arctics, etc., into the alleys, but now I shall do all in my power to assist these ragpickers to a plentiful spring crop. They receive four cents a pound for them; besides, quite a number of boys and girls get employment in cutting off the rubber. It's queer, baling them. Hundreds of them are flung into a huge box lined with burlaps. Then a man on each side pumps on a windlass—this may not be clear enough, but that's what it looks like. When the box was opened I saw the rubbers had been pressed out of all semblance.

The proprietor took me to another warehouse where the rags were being sorted. A long room was bordered with deep boxes, in shape and size like tables, with bottoms of sieves for the dirt to sift through. On either side stood women rapidly sorting them, and unerringly flinging the rags into various barrels round about. They wore calico gowns reaching to their feet, and kerchiefs on their heads, to protect themselves from the dust. They didn't seem to be paying any attention to whether rags were linen, woolen, mixed, what not. I asked one of them how she tells. "By the feeling. We scarcely ever stop to tear it. We get so that we can tell anything by touching it, even with our eyes shut."

"Easy learnt? Well, for those as has the knack. Some girls pick it up in a couple of weeks, some never can learn it, Oh, it isn't disagreeable work when you're used to it. Most rags is pretty clean. Some"—she pointed to a bin. It gave new meaning to men's righteousness being like "filthy rags."

CHINESE SUPERSTITION.—The *Lancet* states that a medical missionary nearly lost his life through an outburst of fanaticism at Foochow, China. It seems that the doctor, who was attending a patient with hemorrhage, immediately proceeded to check the latter, in disregard of a native superstition, according to which delay should have been made until the patient's friends had finished consulting the gods in the joss house. The patient died, and the Chinese would have boiled the doctor in oil but for the courage of some of the converts.

HARD AND SOFT WATER.—All cooks do not understand the different effects produced by hard and soft water in cooking meat and vegetables. Peas and beans cooked in hard water, containing lime or gypsum, will not boil tender, because these substances harden vegetable cascine. Many vegetables, as onions, boil nearly tasteless in soft water, because all the flavor is boiled out. The addition of salt often checks this, as in the case of onions, causing the vegetables to retain the peculiar flavoring principles, besides such nutritious matter as might be lost in soft water. For extracting the juice of meat to make a broth or soup, soft water, unsalted and cold at first, is the best, for it much more readily penetrates the tissue; but for boiling where the juices should be retained, hard water or soft water salted is preferable, and the meat should be put in while the water is boiling, so as to seal up the pores at once.—*Journal of Chemistry.*

The Standard of Excellence.

KINGSFORD'S

OSWEGO

Pure and Silver Gloss



STARCH

KINGSFORD'S

OSWEGO CORN STARCH

FOR

Puddings, Custards, Blanc-Mange, Etc.

THE PERFECTION OF QUALITY.

WILL PLEASE YOU EVERY TIME.

Always ask your Grocer for these goods.

COLDEN'S LIQUID BEEF TONIC.

ORIGINAL LABEL:
"Colden's Liebig's Liquid Extract of Beef and Tonic Invigorator."

AN INVALUABLE AID IN THE TREATMENT OF ALL CASES OF DEBILITY.

Established 15 Years. Endorsed by Scores of Physicians. Essentially Different from all other Beef Tonics. Beware of Imitations.

COLDEN'S LIQUID BEEF TONIC consists of the Extract of Beef (by Baron Liebig's process), spirit rendered non-injurious to the most delicate stomach by extraction of Fusel Oil, soluble Citrate of Iron, Cinchona, Gentian and simple aromatics. An official analysis of this preparation by the eminent chemist ARTHUR HILL HASSALL, M. D., F. R. S., and an endorsement by SIR ERASMUS WILSON, F. R. S., is printed on the label of each bottle.

Its Range of Action Embraces all Cases of Debility.

By the urgent request of several eminent members of the medical profession, I have added to each wineglassful of this preparation two grains of SOLUBLE CITRATE OF IRON, and which is designated on the label as "No. 1," while the same preparation, without Iron, is designated on the label as "No 2."

It acts directly on the sentient gastric nerves, stimulating the follicles to secretion and gives to weakened individuals that first pre-requisite to an improvement, an appetite.

☞ *I will, upon application, send a sample bottle of Colden's Liquid Beef Tonic to any physician in regular standing. Please ask your Dispensing Druggist (if he has not already a supply) to order it. In prescribing this preparation physicians should be particular to mention "COLDEN'S" viz: "EXT. CARNIS. FL. COMP. (COLDEN). It is put up in pint bottles and can be had of Wholesale and Retail Druggists generally throughout the United States.*

C. N. CRITTENTON, Sole Agent,

115 Fulton Street, N. Y.

Please Mention the AMERICAN ANALYST.

CORRESPONDENCE.

FROM THE ANTIPODES.

A PLEA FOR DIRECT TRADE BETWEEN THE UNITED STATES AND NEW ZEALAND.

DUNEDIN, NEW ZEALAND, *April* 20, 1888.

Editors AMERICAN ANALYST:

The encouragement of direct trade with foreign countries is, I notice, attracting attention in commercial and business circles in the United States, but I am inclined to think that the possibilities of opening a really lively trade with this part of the world have been overlooked. There is a certain amount of trade with American ports, it is true, but nothing approaching the scale on which it might be, and in respect of this I may state that the Pacific mail line of steamships between San Francisco and Sydney, New South Wales, calling at Auckland, has been a great disappointment to those who in the establishment of this service thought that commercial intercourse would be developed to an appreciable extent. That this has not been the case is, no doubt, in some measure attributable to tariffs on both sides which have been hostile in their effect, although not so designed. It may well be worth considering whether it may not be practicable for the United States and the Australasian colonies to mutually resist the embargo on certain classes of goods, agreeing to reciprocity at least in regard to commodities, the production of which is special to the several countries, and the importance of which consequently does not require to be guarded against by protective duties on either side. It must, however, be understood that, except in Victoria, or to a more limited extent in South Australia, the customs duties levied on foreign imports are scaled on a revenue basis and with no view to protection of local industries. But there is a decided movement at present in the direction of encouraging such industries by higher tariffs. I am impressed, however, with the idea that an understanding might be arrived at in the case of each colony with the United States, whereby many important American manufactures would be admitted, subject only to moderate duties required for revenue purposes. On the other hand the United States should be prepared to give as well as take and to place Australasia generally on the footing expressed in commercial treaties as that of "the most favored nation." There is no scope in this letter for entering into statistics. My intention is simply to wake up, if I may so express myself, the commercial public to the field of enterprise, year by year increasing in extent, which lies before them in the western Pacific. The soil is hardly broken as yet. I believe it would well repay cultivation. I am not aware of the fate of the Tonnage Bill which I believe has been presented to Congress during the present session, but I am impressed by the conviction that the support of American steamship lines would be a direct step towards opening up the Australasian trade.

A great deal of ignorance—I may say so without offence—prevails, to my knowledge, in the States relative to Australasia. Very little is known as to the natural character of the several countries or their constitutional position. There are in all eight colonies, which, with the exception of Western Australia and Fiji enjoy perfect freedom of internal government, even to the extent of settling their own postal policy. In many respects they assimilate to the States of the Union, except that the Governor is appointed by the Queen, administers in her name, and technically is authorized to exercise the prerogatives of the Crown. Five colonies—Western Australia, South Australia, Victoria, New South Wales and Queensland—are on the Australian continent. Tasmania, the old Van Diemen's Land, is an island 150 miles to the south of Victoria. New Zealand consists of two large islands, which lie to the south-east of Australia at a distance of about 1,200 miles. The Fiji Islands are about 1,000 miles to the north of New Zealand. A glance at the map will show that this group of colonies extends through many degrees of latitude, and the proclivities of the soil vary accordingly. There is great mineral wealth, including the precious metals and coal. The aggregate population, exclusive of aborigines, who, except in New Zealand, are of no account, numerically or otherwise, is now approaching, if it does not exceed, 4,000,000. That there is room for, and natural resources to supply and occupy fifty times that number, is a matter of fact rather than of speculation, and a great future is no doubt before the future United States of Australasia.

BURNETT'S
PERFECTLY PURE HIGHLY CONCENTRATED
Standard Flavoring
EXTRACTS

THE superiority of these Extracts consists in their
PERFECT PURITY AND GREAT STRENGTH.

There is no subject which should more engross attention than the purity of the preparations which are used in flavoring the various compounds prepared for the human stomach.

They are not only true to their names, but are prepared from fruits of the best quality, and so highly concentrated that a small quantity only need be used.

JOSEPH BURNETT & CO., Boston, Mass.

CREMATION IN ENGLAND.

THE ENGLISH CLERGY EARNEST IN ITS ADVOCACY.

An English clergyman, the Rev. C. J. Street, M. A., has been reading a paper on cremation at Croydon, and he not only approved but championed what, at one time, was supposed to be an anti-christian custom. Death, he said, was the source of life, and the dissolution of the one generation was necessary for the health of the succeeding generation. All dead bodies resolved themselves into their constituent elements, but they were doing their best to thwart and hinder this process by the present system of burial, more especially if they yielded to the folly of leaden or oak coffins. In cremation the work was done in a single hour, and without the dangers which accompanied the present system. Recent science showed that the most devastating diseases were due to living organisms which fed upon the victim. These disease germs continued to live in the air long after the body had ceased to exist. When graves were opened exhalations were allowed to get out. Nay, it was known that paupers' graves had been opened and the bones taken out and burned, the graves being again used for a similar purpose as before. It was related that soil from a graveyard sprinkled on a garden thirty years after it became infected had been the means of creating disease. When these facts were borne in mind, and it was also remembered that in England and Wales there were 11,000 cemeteries, they need not wonder at the continual scourges of the epidemic diseases which beset our country. In 1874 it transpired that the entire drainage of a cemetery discharged itself into the river Wandel, from which some of the people of Tooting were in the habit of taking their water. In 1851 the average cost of cemetery land per acre was shown to be £123. It was said this was no waste of land, because cemeteries made public parks, but he did not share in the taste which delighted in taking a "constitutional" in the neighborhood of tombstones. He preferred to walk through the crowded streets. Some people opposed cremation because they said it would prevent the Lord raising them at the Last Day. This was of course based upon ignorance. Surely the day was past for men seriously to maintain that the actual body that died would be raised particle for particle on the resurrection day! The present Bishop of Manchester held this to be a degrading superstition, Bishop Fraser concurred in that opinion, and it was condemned by all right-thinking people. Cremation would prevent two things: The robbery of dead bodies, and the possibility of being buried alive. If, by chance, a live body should be cast into the furnace death would be almost instantaneous, unlike the slow torture, if such an event happened by burial. In the discussion which followed, the only dissenting voice heard was that of a doctor, who thought that cremation would shield the secret poisoner. So this is the last stronghold of the advocates of soil and water pollution by burial, the secret poisoner would be protected!—*Sanitary News.*

CHILDREN IN LONDON AND PARIS.—In London the proportion of children under five years of age is nearly double that of Paris, but the proportion of London population between 40 and 60 is only about two-thirds that of Paris.



We begin next September our usual heavy fall advertising. Before then we wish to know which papers will pay us best. Therefore we shall, until September 1st, send **FREE** to anyone mentioning the paper in which he saw our advertisement, our package 20 samples cloth, from which we cut to order the

FAMOUS PLYMOUTH ROCK
CUSTOM-MADE $3 PANTS

and **Suits at $13.25.** Each package contains guaranteed self-measurement blanks, and a linen tape-measure, with full instructions.

PLYMOUTH ROCK PANTS CO.,
18 Summer St., Boston. 285 Broadway, N. Y.
Address all mail to Boston Office only.

"ROYAL POLISH"



The Most Reliable Dressing
FOR
Ladies' and Children's Shoes.

It is the BLACKEST.
It COATS the Leather the LEAST.
Does NOT INJURE the Finest Kid.

There is nothing AT ANY PRICE equal in quality, or so convenient and CLEANLY TO USE.

SOLD EVERYWHERE.

Ask Dealers for "BIXBY'S ROYAL POLISH."



"BIXBY'S BEST"
For GENTS' BOOTS.

Shines Quickly!
Saves Labor and
Leather!!

—TRY—
"Size 5" OR
"Size B"
WITH
Pat. Sliding Handle



THE MOST PERFFECT EVER INVENTED.
Working under the box, ready for use when wanted



FOODS IN NEW JERSEY.

REPORT OF THE DAIRY COMMISSIONER AND RESULTS OF ANALYSES.

The annual report of the Dairy Commissioner of New Jersey for 1887 has just been published. As under the laws of that State, passed at various times, the Dairy Commissioner has supervision of all food products and drugs, it becomes an important document, and a synopsis of its contents will undoubtedly interest our readers. The oleomargarine law and various methods of detecting added color, lard adulteration and its detection, vinegar, and various short notes on investigations made during the year occupy a portion of the report, but having been heretofore noticed we will pass them over. The portion devoted to honey adulteration we reproduce in another column. The analyses and comments on condensed milk we have already published, and the part devoted to the assay of opium and the present state of the trade in drugs is not of sufficient general interest to require any particular reference here.

The most interesting part of the report is that devoted to the analyses of foods for invalids and infants and some brief references to canned goods, candies, baking powders and alleged cases of poisoning occurring in the State during the year. Searching investigation proved that in every case reported in the newspapers of poisoning said to be caused by canned food, the report was without foundation in fact. Very little dangerous or poisonous material was found in candies, but in several instances bad results were traced to the over-feeding of children with candies. One case of serious illness after eating smoked sturgeon was readily explained by the fact that the fish eaten was moldy and putrid. Relative to baking powders, the Commissioner declares his intention of having a full examination made of the alum question. If this is done in the usual thorough manner of Dr. Newton and those very capable men whom he has judiciously selected as his co-laborers and advisers, without being influenced by the conflicting opinions of those who have heretofore been engaged by interested parties to write upon the subject, it will be one of the most valuable contributions to our knowledge of this very important branch of the food question.

The notes in the report on foods for infants and invalids by Professor Leeds are a continuation of that gentleman's former valuable labors in that special field in which he is justly acknowledged to be one of our best authorities. The manufacturers of the different foods spoken of in detail will read this report with varying emotions. We have heard the opinions of some and they are generally amusing. Those who have been commended, and they are few, and strange to say, they are not actively pushing the commended goods, are patting themselves complacently on the back and indulging in flattering remarks about Professor Leeds, while those who are criticised are nursing their wrath, impugning Mr. Leeds' motives and questioning his skill. Some are devising ways and means of escaping his castigation, others are making more or less good defences, and in one instance a firm is shrewdly employing Professor Leeds' analysis, which they claim to have proven to be wrong, to help the sale of their goods where the quality of goods represented by the analysis is in demand.

Of the preparations examined and reported the Franco-Swiss milk food, Loeflund's cream emulsion and matzoon are not sufficiently known to the public to make the report on them of interest. Wells & Richardson's lactated food is severely criticised for its composition as well as for an alleged misnomer and the advertising of an erroneous analysis—Professor Leeds even attacking an opinion of Dr. J. Milner Fothergill, given in favor of the food. The proprietors of this food not caring to make any defence to Professor Leeds' allegations we pass on to the malted milk, which is criticised for not doing that which is not claimed for it by the makers nor expected of it as an infant food, viz.: converting starch freshly added to it. Of the various malt extracts, Maltine is commended and the Trommer Extract condemned. As the latter preparation was very much puffed in a late report issued under the alleged official sanction of a State Board of Health in another State, it creates a question in the mind of the reader as to who is right, Professor Leeds in his official report, or the other investigator in an alleged semi-official publication. Merck's dry extract of malt was found entirely devoid of any diastasic action. Johann Hoff's Malt Extract, the analyst says, has no diastasic power, but the further statement that it contains no alcohol is not borne out by even one of the many analyses which have been made by some of the best chemists, many official analysts in Europe and the United States among the number. The comments upon the Best Tonic, bear out exactly what the manufacturers claim for it, and the criticisms fall to the ground, as it is not claimed to possess diastasic power.

The next article referred to is Murdock's Liquid Food. This is not enthusiastically recommended, and the suggestive reference to the blood it contains and its peculiar smell are not very appetizing to an invalid's weak stomach. Bovinine has also been examined, but, very much to the surprise of those who positively know its composition, the analyst failed to find in it essential ingredients and only about one-half of its well-known contents. In this instance there is absolute evidence of some oversight on the part of the analyst. Valentine's meat juice is not only very highly praised, but Professor Leeds has taken the pains to add his personal experience of its use on several ocean voyages, giving one the impression that the worthy professor wished to express his gratitude for having been relieved of that most unpleasant of all maladies, seasickness, by a most emphatic puff in his official report. We will continue further review in our next issue.

SUBMARINE SPRINGS.

ONE OF THE HIDDEN WONDERS OF THE EARTH'S STRUCTURE.

There are few people who have any idea of the enormous extent of our underground supplies of water. Thus the city of London stands over one vast lake in the chalk; and in an artesian well sunk at Tours, in France, leaves, stems of plants, and ears of grain tolerably fresh came up with the water, which terrestrial relics were traced to the department of Ardeche, about 255 miles distant. It must also follow that springs will occasionally discharge under the sea. This occurs in the Persian Gulf, off the arid coast, near Bahrein. The boatmen take advantage of the fresh water bubbling up under the sea to dive down, and then speedily filling their goatskin sacks rise with the ascending current. These springs are probably from the same source as those which rise a little way inland, namely, the green hills of Oman, 500 miles distant. Both are tepid, and from their temperature are believed to rise from a depth of 800 feet. The Arabs imagine that this fresh water at the bottom of the sea is the material out of which the oysters make their pearls, and Mr. Grattan Geary tells us it is an ascertained fact that the best pearls are found after a season of heavy rains. Similar springs exist in the Gulf of Spezia and various points off the shores of Greece, though in the latter case they are cold, and therefore of shallower origin than those of the Persian Gulf. Though the sea can never be considered as the source of springs, there are circumstances which may cause them to rise and fall with the tide. For example, the tide may check the flow of a spring with an outlet near the seashore by ascending for a long distance up its channel. Thus, according to Mr. Cooley, in the military hospital at Lille, about thirty-five miles from the seashore, there is a copious well which has a daily and also a monthly variation. Its maximum discharge during the day, which is nearly double its minimum, occurs always about eight hours after high tide on the coast between Calais and Dunkirk. Finally, we may add that springs in granitic regions—being, as a rule, derived from isolated reservoirs—are numerous, but not very copious, while those which permeate more porous rocks—being frequently in more or less continuous communication—are more abundant.

ADVERTISING FRAUDS.

HOW CITY ROGUES ATTRACT THE ATTENTION OF COUNTRY VICTIMS.

The following advertisement, cut from the columns of a Western journal, has been sent to the AMERICAN ANALYST, with a request to investigate it.

AN OPPORTUNITY

Each Worth $98. | Cut of a Gun. | To secure this Gun free. Don't miss it.

If you wish one, send at **once** the name and P. O. Address of *every* sportsman or hunter in your county to whom you will *guarantee* to show it, and give away **FREE** some of our sample boxes of the best Brass Shells and shooting ammunition on *earth*. Name your County and express office where to ship goods. *Honest* men will be paid **$2** per day for expenses. Send two stamps, and address

SAMPSON GUN AGENCY,
34 Church St., N. Y.

We read the advertisement carefully, and came to the conclusion that it was like all that class of advertising addressed by knaves to fools. The object is clearly to obtain names and addresses for purposes easy to imagine in these days of "green goods." Investigation showed No. 34 Church Street, N. Y., to be an old, but very small building, having been cut down to a depth of only about ten feet. Upstairs is the office of a notary and real estate agent, and the small store is occupied by a cigar dealer, who adds to his income by renting out boxes, through which, people who do not like to be called on personally and who generally carry their offices in their hats, receive very large mails. There is certainly no gun agency in the building, nor could any gun, or even pistol, be seen. The proprietor of the cigar store and letter boxes, upon being asked if there was any Sampson gun agency at that number, nervously replied that there was not, but that a party called for mail thus addressed, at irregular intervals. Further comment is unnecessary. The attention of the Postmaster is called to this.

American Analyst,

Published on the 1st and 15th of each month.

Subscription, - - - - - - $1 per year.
Single Copies, - - - - - - 5 cents.
Subscriptions to foreign countries, - $1.50.

Remit by Express Money Order, Draft, P. O. Order, or Registered Letter.

Advertising rates on application.

EUROPEAN AGENCIES.

On file at "American Exchange," 449 Strand, London; and American Exchange," 35 Boulevard Des Capucines, Paris.

THE ANALYST PUBLISHING CO.,
Publishers.

H. LASSING, M. D., } ***Editors.***
T. P. McELRATH,

No. 19 Park Place, ... New York.

NEW YORK, JUNE 1, 1888.

ANSWERS TO CORRESPONDENTS.

NURSE.—*What is Matzoon?* A preparation of fermented milk similar to Koumiss.

DOROTHEA.—*What is your opinion of the felt tooth brushes?* We have not yet examined them.

CROCKERY.—*What is the practical result of your crockery articles?* See article in another column.

PRACTITIONER.—*Are Murdock's Food and Bovinine alike?* The former, in our opinion, is a poor imitation of the latter, which possesses the virtues of being well made, of good materials, not decomposed, and well adapted for the purpose for which it is designed.

TOKAY.—*In an advertisement of the Cambridge apartment house, great stress is laid upon the genuineness of the Hungarian wines imported by Lorenz Reich, the proprietor. Do you know anything about it?* We do not. We have seen an apparently official statement that he has never imported any.

POPULAR CANDY CHEMISTRY.

According to the newspaper reporters Dr. Cyrus Edson, of the New York Board of Health, has been furnishing what he calls simple tests for ascertaining the purity of the candies sold in New York. He divides the adulterants used in candy into three kinds—those for bulk, for flavor and for color. For bulk, in order to increase the profits, the confectioner will use terra alba, kaolin, ground quartz, whiting and starch. These Dr. Edson declares injurious, though not poisonous. He advises that a little of the suspected candy be dissolved in cold water. If kaolin or quartz has been used, it will settle to the bottom of the glass. If whiting (ground chalk) is present, a little acid will make the solution effervesce. If there is starch, a drop or two of tincture of iodine will turn the solution to a bluish color. By burning a little of the candy and mixing the ashes in water and adding a little chloride of barium, a white cloudiness may be produced. If it is, there is probably terra alba in the candy. Adulterations for color, he says, are some of them harmless, and some highly injurious. He recommends that a little of the candy be dipped in alcohol. If the color is dissolved out, dip a white woolen yarn in the solution. If the yarn is colored, the adulteration is probably a coal-tar color; if this is red, it may contain arsenic. If the alcohol does not remove the color, put a drop of hypochlorite of calcium in solution on the candy. If the color fades out, it is probably harmless. The commonest poison used for color is chrome yellow, which is a very dangerous poison. Pour ammonia on the candy. If it turns red, it contains turmeric, which is harmless. Dissolve some of the candy in a clear tumbler of water. Hold this in the sunlight and look at the water against a black background. If it looks yellow-green as seen against the black, and yellow when held to the light, it is harmless. It contains fluorescein. If these results are not obtained, don't eat the candy. It probably contains chrome yellow. Again dissolve a bit of any suspected chocolate or brown colored candy in a glass of hot water, and see if any burnt umber is left in the bottom undissolved, in the form of a brown, gritty residue. If so, don't eat the candy. No simple test is known by which to detect the presence of prussic acid fusel oil, oil of vitriol, wood alcohol and rancid butter, all of which, with some other ingredients, are sometimes used to give a pleasant flavor to the candy. But if the candy was bought from a reputable first-class dealer, and any of it is left after all these tests are applied, you may eat it without serious apprehensions.

METROPOLITAN CRIME AND WHISKEY.

The enterprising New York *World* one day last week engaged the services of the Rev. T. De Witt Talmage to attend and report the proceedings in the Tombs police court during the morning hour devoted to the criminals and outcasts arrested during the night. The reverend reporter's description of the scene he witnessed was characteristically vivid and dramatic. The strictures embodied in the following passage concerning the curse of drink in this metropolis will not be wholly new to the readers of the AMERICAN ANALYST:

"Drunk and helpless" was the charge against most of those who were put under scrutiny yesterday, and most of us would run right off into temperance harangues. But I do not believe that genuine brandy or whiskey or wine does the most of this. The most of these destroyed men and women have not had an honest drink for ten years. The liquor sellers mix up all sorts of poison and call it rum. Genuine rum takes one more gradually down, descending only an inch a mile, and deceives him with the idea that he is not descending at all, until it is too late to halt; but the awful stuff these wretches buy for three cents a glass drops them as by a stroke of apoplexy. They are as certainly drugged as though some one had poured down their throat a dose of 'Paris green.' While our temperance men are fighting rum (and may God give them speedy victory) the officers of the law should, with chemical experts, go through the liquor saloons of New York and show that not one of them, from Central Park to the Battery, is selling what they pretend to sell, and demonstrate the horrors of liquor adulteration. When yesterday morning I saw the people arraigned for drunkenness and noticed their burnt cheeks and cracked lips and bleared eyes, and consumed manhood and womanhood, I felt like crying Fire! Fire! In the swill that had been fed them by the liquor sellers were mixed logwood, sugar of lead, yarrow, deadly nightshade, turpentine, copperas, cocculus indicus, sulphuric acid, indigo, potash, cochineal, blue vitriol and other delicacies. What is the use of the Board of Health in any city if it allows such liquid infamies? Great outcry against oleomargarine in butter, and chicory in coffee, but how harmless these compared with this beverage of dynamite? Tell these poor victims what you are going to give them when you fill their glasses on the counter of the groggery, and they would decline the scarification of body and soul."

A HARMFUL POLICY.

American medical journals, by blindly upholding all sorts of preparations coming from abroad, and publishing crudely written reports concerning them by medical tyros anxious to see their names in print, have unconsciously involved the profession here in the very anomalous position of endorsing and supporting nostrums. They have done this by puffing these imported patent medicines because the importers shrewdly refrained from advertising them, knowing well that the gratuitous puffs they should receive in the columns of these medical papers would serve them much better. The American manufacturers of pharmaceutical preparations on the other hand who were making honest goods on published formulas and spending their money freely in advertising them to the profession only in these same journals, whose sole pecuniary support in most cases comes from this source, have been treated in the most stepmotherly way, and any mention of these home-made goods in the truly orthodox columns of the medical press has been carefully avoided. Our reference to foreign nostrums is prompted by the success of one or two German chemicals, the products of synthesis, which opened the doors for a flood of antiseptins, antifebrins, antipyrins, and other "antis" ending in "ol" or "in." They come to us covered all over with patents—patents covering the names, the process of manufacture, the ingredients (save those which are kept absolutely secret), the modes of dispensing, the package, the label—in short, everything that a patent can be made to cover. In a word, they are patent medicines in the very widest and strictest sense of the term, and yet they are received with enthusiastic welcome by press and practitioner, and are given, gratis and gladly, advertisements that money could not purchase for a home product, even though ten times more valuable, and not one-tenth so much patented. It is useless to plead that these imported patents are so valuable that the profession *must* have them and *must* use them, secret nostrums though they be. This is not true, nor is it true that the manufacturers over there are any more honest or frank as to the nature and origin of their wares than are the American manufacturers of similar drugs. In proof of this assertion we call the attention of our readers to Gawalowski's merciless exposure of a new compound which is getting ready in Germany to make a descent on Europe and America in the style of its predecessors, the antiseptic kreolin, of the wondrous value of which the advance guard of certificates have already commenced to appear in our journals. Will the latter be warned in time, or will they swindle themselves out of thousands of dollars by giving it the usual American welcome and gratis advertising?

IMITATION CHOCOLATE.

The falsification of chocolate with starch and various other substances has long been known. The *National Bottler* says that an English firm have recently put upon the market and advertised, by secret circulars mailed to the chocolate manufacturers, a chocolate coloring matter intended for the reinforcement of chocolates falsified with materials which lighten the color of the product. The circular claims that the coloring matter is "inoffensive," etc., but an analysis, made by Harmens Wyn, of Amsterdam, shows it to consist almost entirely of oxide of iron mixed with a little alumina.

ADULTERATED HONEY.

The report of the Dairy Commissioner of New Jersey, for the year 1887, has just been published. Among other interesting information it contains, is that about strained honey, of which samples were bought in different parts of the State. It was ascertained that that which was put up by the farmers was pure, and that the chief adulterators were the packers in New York and Philadelphia. The chief adulterant detected was glucose, and few samples were mixed with cane sugar syrup. Some of the jars contained nothing but liquid glucose with pieces of comb floating in them to give the liquid a flavor. While this adulteration is not injurious to health, it is a fraud on the consumer, in price and value.

The inscriptions on the labels make rather funny reading. Among those samples found to be adulterated were those bearing the following labels: McCaul & Hildreth Bros., N. Y., "White Comb Honey;" Wardell &

Watson, Brooklyn, N. Y., "White Clover Honey, from the Apiaries of Central N. Y., Warranted Pure;" E. A. Walker, Greenpoint, L. I., "Superior XXX Honey, Warranted Pure;" E. A. Walker & Bro., 135 Oakland Street, Brooklyn, N. Y., "Choice Honey;" Chas. Israel & Bro., N. Y., "Choice California Honey;" E. F. Watson, Brooklyn, N. Y., "Pure California Honey from Groves of San Diego—There is None Better;" McCaul & Hildreth, N. Y., "Choice Extra Honey;" "F. G. Strohmeyer & Co., New York, "Pure Orange Blossom Honey —Is Absolutely Pure, no Glucose." Of the total samples examined, numbering forty-one, only sixteen, or about 39 per cent. were found pure.

PLAINER FACTS ABOUT CROCKERY.

We thought that we had stated the difference between hard porcelain and ordinary pottery, miscalled china, very distinctly, but having received numerous enquiries on the subject, we feel compelled to add a few more and still plainer statements. Laying aside the question of lead poisoning from glazes on hard pottery, until our complete analyses are published, we will simply state that so far as we can ascertain, there is but one manufacturer of hard porcelain in the United States, although there are some four or five factories which claim to make hard porcelain. Owing to the more expensive methods n cessary to the manufacture of hard porcelain, as explained in our preceding number, this ware costs about twenty per cent. more than the so-called hard porcelain, and for the reasons hereinafter given is far cheaper than the other. As to the practical difference, hard porcelain plates may be placed in a dish or plate heater, heated up much more than any plate ever is heated and plunged in cold water without injury. This cannot be done with any other than hard porcelain ware. Again, hard porcelain ware can have the toughest meat cut upon it with the sharpest knife without receiving damage, while other ware will show the marks of the knife. And thirdly, all other but hard porcelain ware will show the marks of frequent scouring and washing on the face in a very short time.

A PHYSICAL CONSCIENCE.

THE MORAL OBLIGATION OF PAYING ATTENTION TO WHAT WE EAT.

"My appetite is failing," said a healthy looking young man who was one of a group sitting at a table in an uptown restaurant the other night.

"You are entirely mistaken," was the surprising rejoinder made by another of the party, an old man who had some fame as a *bon vivant*. "It is not your appetite that is failing. Your palate is simply tiring of monotony. I have watched your habits somewhat attentively for a time. You have not given enough attention to the art of eating well; that is all. If you were doing much physical work you would have a steady hunger, but as it is you merely eat from habit, knowing that it is necessary. There are plenty of people who don't get hungry. I knew one delicate woman who declared, and I believed her, that she did not know the sensation of hunger. The proper thing for such people to do is to study the character and the relations of different viands and arrange a variety that will coax the palate."

The younger man first looked confounded, then amused and then incredulous while this brief sermon was being preached, but at its close he was thoughtful as he well might be, for the words were those of wisdom. Very few people, comparatively speaking, realize how much brain and hard work have been, and must necessarily always be, devoted to the subject of eating. A representative of one of the leading grocery firms of the world once said to me that more than one-half the workers of the world made their living by supplying the world with food, and he was careful to explain that by workers he meant all who exerted themselves in any way for pecuniary gain, not merely wage earners, or what we call the laboring class.

"I do not know, or care," as Emerson quotes Confucius, whether this is strictly true or not. It might be an interesting question for a statistician to settle, but the statement was nearly enough true, as will appear after a very little thinking, to afford food for reflection.

First, it points to a fact which all are apt to forget, namely, that eating is, after all, the main business of life. This is mortifying enough, no doubt, to spiritual minded persons, and will be denied, without question, by any disciple of the modern aesthetic school, if any such survive, yet it is the truth. I do not mean, of course, that eating is the end to be attained. In the very nature of it, the act of eating is the employment of means for some other end, but it is the main business of existence, precisely as the fireman's work is the main business on board a great steamer during the voyage. Other things are as important, no doubt, but everything else would come to a standstill if that were suspended. Wheels and hands are as important in a clock as the main spring, but the main spring does the work.

This leads to the second point, that study and care in the matter of eating are not only well expended, but are absolutely necessary, and of all the manifold marvels in the construction of the human body, none to my mind is greater, none better displays the beneficence of nature than the provision made for the enjoyment of food. It is an ever available reward for conscientious care in the discharge of a duty. The reasoning is plain. Eating is necessary; injudicious eating is harmful. It may, like any other transgression, bring momentary or incomplete enjoyment, followed by or mingled with suffering, but the suffering is inevitable. Proper eating, on the other hand, brings not only keen present pleasure, but a substantial result of enjoyment in the shape of health and power.

Call me gross, if you will. Carp at the materialism of the philosophy. I will only say that if you despise physical enjoyment you are contemning one of the most gracious gifts of God. And if you neglect physical laws, as spiritual and intellectual fanatics have done time out of mind, and will do, probably, while the world stands, you will cripple if you do not destroy your spiritual and intellectual qualities.

But some one will say that all this leads to epicureanism. Yes, so far as epicureanism means the intelligent care of the temple of the soul and mind. He who sweeps and garnishes a temple, and keeps it in repair with diligence and loving care, by that service worships as truly as the high priest who conducts the ceremonies.

The truth remains, and there is no possibility of cavil, that by intelligent eating the human machine, physical, mental, spiritual, is kept going in good order. Without such eating it does not work well. What, then, are we to eat?

The palate, with its wonderful machinery for the detection of evil and the enjoyment of good, was beyond a question given to man as a guide in the selection of food. The perfectly natural man, living a natural life, unharmed and unswayed by previous habits, would be able to tell good food from bad by his sense of taste. Of course the other senses would assist him in their service as outside sentinels. His smell, his sight and his touch would all assist in forming a judgment, but the taste would be the final arbiter. To argue on this would be like trying to prove the multiplication table.

Given the palate as a judge, then, are we to eat what tickles the palate and reject what does not? I say yes, though there are certain qualifications to be made. I challenge every educated physician in the land to say whether he does not know of surprising results for good arising from the gratification of some demand of the palate which seemed absurd if not dangerous. If the physician has given any special attention to obstetrics, his reply will be particularly valuable. The marvellous reflex action of the dawning life upon the system of the mother is clearly shown by the strange desires that baffle skill when an explanation is asked, but for which the highest skill demands gratification.

But the qualifications! Yes. The thing for civilized man to do is to educate the palate back to its natural state. By this I do not mean to get rid of all so-called "acquired tastes," though many of them are mischievous. I do mean that the man who has warped and distorted the powers of his palate by vicious habits, or who has had it done for him in his childhood or before his birth, should, if he desire to utilize all the possibilities of his physical system, bring back the natural play of his sense of taste.

This, however, is practically impossible. Whatever perfect reformations may be practicable in morals or in purely intellectual matters, no entire renewal can come to that delicate sense which is so easily sent astray by education. The children of Israel never entirely recovered from the longing for the flesh pots of Egypt.

It is possible, however, for any intelligent man by the use of experience, judgment and will power to redeem some of the errors into which his physical conscience has wandered.

Let him first employ his judgment in discarding injurious combinations. The gross forms of these are soon learned, for there are some facts so obvious as to be easily recognized by the meanest intellect. No sane man, for example, would wash down a hearty meal of lobster with copious draughts of milk. Both of these articles might be perfectly harmless to him, but taken into the human stomach together they are almost deadly. But there are all shades of combination possible in the numerous varieties of food we use. These must be studied in the light of practical chemistry, even if the man is ignorant of the refinements of that marvellous science.

Here is where the skill of the greatest gourmets finds its play. To astonish the palate with a succession of sensations by the use of different foods is easy enough. It is easy to make a few changes that will in succession gratify as well as astonish. But the art lies in so arranging the succession of dishes that the sense of taste is not wearied, and the appetite is coaxed by each change, not whipped and driven, while at the same time the chemical combination of the different foods shall not be injurious. There is room for as much skill in this as there is in the arrangement of color by a painter.

Then experience must be consulted. "One man's meat is another's poison," and many idiosyncrasies are only to be discovered by experience. The highest medical skill fails to foretell or explain some of them. It is certain, however, that many persons are unable to take food that is most nutritious and valuable to the majority of mankind. Having discovered what these things are, the will power is often necessary to turn from them.

Here lies the apparent contradiction to what I said before. It is not uncommon to hear people say, "I enjoy so and so greatly, but I cannot eat it. It tastes good, but it does not agree with me." This is clearly a case of perversion of the palate, and results from the previous breaking of natural laws. Patient endeavor may modify this, and may even cure it. At all events the effort to overcome unnatural tastes will bring in such a case, as in any other, a substantial reward.

DAVID A. CURTIS.

A WISE DEPARTURE.—The *Prairie Farmer*, the well known agricultural journal, sets a most excellent example, not only to publications of its own class, but one which might be followed with great moral benefit by the religious press of the country. In its last issue it announces that it will not take into its pages the certificates of "cures" wrought by the patent medicine "specifics," cancer cures, consumption cures, etc. The religious press of the country is the main source of support of most of the swindling nostrum venders, and no announcement of the virtues of these "cures" is too vile or mendacious to suit their pages.

HELEN'S ESCAPE.

IN FOUR CHAPTERS.

CHAPTER IV.

Helen's health became a subject of such anxiety to me, that I determined to remove her for a while from the neighborhood of scenes fraught with such painful associations; so we closed our house and started on a prolonged foreign tour. We travelled for three months in Italy, Sicily, and the Riviera, and at the end of September arrived in Paris, where we proposed to remain a few days previous to returning home.

I am an old habitué of Paris, and I have always remarked how, in the absence of any startling crime, the complaint rises of the lack of news. Politics are all very well, and serve to keep the *flâneurs* of the boulevards and a certain section of the people provided with topics for conversation and discussion; but the typical Monsieur Prudhomme likes nothing better than a good startling crime, with plenty of harrowing details, and a strong spice of mystery about it.

We were not very long in Paris before we found out that the all-absorbing topic of interest was "l'affaire Arosa." Wherever we went, we heard of nothing but "l'affaire Arosa." The hawkers cried it on the boulevards; in trams and omnibuses and trains it was the subject of conversation; the waiters at the hotel whispered about it during the intervals between the courses at the *table d'hôte;* the first part of the daily paper attacked was that which was headed 'l'affaire Arosa."

The name Arosa seemed familiar to me; at anyrate, I remembered to have heard it, but for the life of me, I could not recall when or under what circumstances; so I bought a *Gaulois* with the view of enlightening myself about "l'affaire Arosa," and on the chance that something therein might bring to my mind the circumstances with which, in my memory, the name Arosa was associated. I had not read half-a-dozen lines before I was carried back in imagination to the Rue de Douai during the seven days of the Commune, and was again face to face with the poor cowering wretch who had given his name to me as Dixon Rayne. The following is a free translation of what I read: "It was elicited in the course of examination that the accused, who, although an Englishman by birth, is a cosmopolitan in crime, and speaks half-a-dozen European languages fairly well, had been the keeper of a well-known gambling saloon in the Rue de Provence for some years, and that he had been ruined during the siege. For some time previously he had been paying marked attentions to Madame Arosa, an invalid Spanish lady of great wealth, undoubtedly with the sole object of getting her money. It appears, however, that his suit was rejected, and that he was driven to the lowest depths of despair. On the night of May 27, 1871, when the Communist cause was making its last struggle, and the city was in indescribable confusion and panic, Madame Arosa, who was known to have withdrawn all her securities from the banking-house of Messrs. Fould, ready for instant flight to Spain as soon as a safe passage could be secured, was found murdered in her bedroom. Her strong-box had been violently broken open and rifled of its contents, and the means of escape employed by the murderer was quite evident, as a window of yellow-stained glass was found broken, and there were marks of feet on the leads below. In spite of the prevalent confusion—for there was severe fighting going on in all the streets around Madam Arosa's house in the Rue Blanche—the alarm was raised by some women who had witnessed the escape of the murderer, and he was pursued. In the confusion of the streets, however, he made good his escape, and contrived to get over to England. The property he sold amounted to a million francs, mostly invested in French and English railways. The President of the court paid a high tribute to the energy and intelligence of Detective Commissary De Bussy, who has for five years been engaged in following up this crime, and who has at last succeeded in bringing a diabolical criminal to justice."

"De Bussy!—Arosa!" I muttered to myself. "I know both the names.—Ah! Now I remember!"

I rushed off to an old friend in the Embassy for the purpose of procuring a seat in the Palais de Justice; for I had had sufficient experience of French criminal courts to know that upon the occasion of great cases admittance thereto without an order is almost impossible. I had got half-way down the Rue de Rivoli, when some one coming down a by-street stumbled against me, and would have knocked me over but that he caught me in his arms. I looked. It was Monsieur Pontneuf!

I do not know what the loungers under the arcade must have thought was the matter with me, but at the sight of this man—the murderer of my neighbor and intended son-in-law, the wrecker of my child's happiness—at the sight of his cool, calm smile and of his brazen face, I fairly staggered and uttered a cry of amazement.

"Why," he said, "you seem surprised to see me. Haven't you had my letters? When I saw you, I made sure that you had come over in answer to them.—No?"

"Monsieur Pontneuf"——I began, in as dignified and scornful a tone as my horror and surprise would allow me to assume.

"No, no; that's all done with," he interrupted. "My name's De Bussy"——

"You—De Bussy—the great detective?" I stammered.

"Yes, yes.—I see you don't know anything about it. Look here. I'm in a great hurry, as the court opens at ten. Here's my card. Give that in at the door and you will get in. Don't be late!—Au revoir!" And before I could collect my scattered senses, he was lost in the crowd. I examined the card; it had simply on it—"De Bussy, Dépôt de Police, Rue Maxas."

What did it all mean? I had heard of the adage, "Set a thief to catch a thief," but never of "Set a murderer to catch a murderer;" yet here was this man, who had clearly and unmistakably killed Jack Corner, posing as the industrious and intelligent representative of order and justice, and aiding in sending a fellow-creature into eternity. However, I had no time to stand speculating, as I must run back to the hotel and tell the ladies whither I was bound, and get to the Palais de Justice at a few minutes before ten.

The court was crowded to overflowing, but De Bussy's card acted as an open sesame, and I was politely ushered to a seat near to the representative of the press, close to the prisoner's dock. As the clock struck ten, the judge entered, followed by a crowd of barristers and lawyers, and the hum of general conversation was immediately stopped. Presently the hum arose again for a moment, and all that sea of anxious faces was turned towards a small door at the side of the court. Through this entered, attended on either side by fierce-looking gendarmes, the prisoner. Imagine my amazement when I recognized at once, in spite of shaved beard and whiskers, Jack Corner! At this distance of time, I can hardly tell what feelings were uppermost within me at this extraordinary *denoûement.* Perhaps better than any description of mine they can be realized by any one who can imagine an old and trusted friend, lamented as the victim of a fiendish outrage, suddenly proved to be a villain of the deepest dye; and a man long suspected and sought after as a murderer, standing forth as the champion of justice and right. My gaze was riveted on the prisoner, who seemed to be perfectly indifferent to his awful position; and presently, in the course of his almost defiant glance around the court, his eyes met mine, and, with a wave of his hand he nodded me a greeting.

The case, which had already lasted a week, proceeded; but it was impossible to pay much attention to it, so occupied was I with running over the incidents of my acquaintance with the man who now stood before me on trial for his life; and so full of thankfulness was I that my poor Helen had been spared union in holy wedlock with such a man. A sudden silence in court diverted my attention to what was going on around me, and I heard sentence of death pronounced upon the murderer of Madame Arosa, my quondam intimate, John Corner. Then the crowd hurried away chattering and laughing, as from a play-house; but I waited for De Bussy.

"Come and dine with me to-night," I said, "and then you can tell us quietly all that has taken place since we last sat at table together."

He accepted the invitation; and I hastened to the hotel to inform my wife and Helen of what had taken place—news which, I need scarcely say, was received with astonishment and thankfulness as great as was mine.

De Bussy dined with us, and afterwards told us as follows:

"I need not detail to you the troubles and difficulties with which I had to cope before I could fairly persuade myself that I was on the track of the right man. Even after I had lived with you for some time as professor of French, I was not sure enough of my man to feel justified in making a *coup;* and had it not been that as a French officer of police I was enabled to terrorize, so to speak, the girl Gabrielle, and to exhort information about Mr. Rayne's movements"——

I caught at the name Rayne, and said: "About *whose* movements?"

"Rayne's—Dixon Rayne's.—Why, dear me, I was going to omit to tell you as curious a thing as there is in the whole affair. You may perhaps remember, when you told me of your adventure during the Commune, how interested I was. Well, no wonder, considering that I was after none other than Mr. Dixon Rayne."

"Then, do you mean to say that the man who took refuge in my room in Paris, and the murderer of Madame Arosa, and Mr. John Corner are one and the same?" I said, more astonished than ever.

"Certainly I do," replied the officer; "and I'm not astonished at your not being able to recognize him, when he has baffled the most clever detectives of Europe during these five years. His hands were yet hot with the murder of the poor old lady, when he claimed your protection.—But to my own story. As I was saying, Gabrielle gave me a lot of information concerning our friend's movements, or I verily believe he would have escaped again. As it was, directly he found out that I was in the habit of meeting the girl on the quiet, he smelt a rat; and we have since found out that his pretended visit to Switzerland meant that he had arranged for flight at a moment's notice. Well, I dined with you that evening, and you left us alone, if you remember. We talked, and each knew that the other was trying to sound him. At length, Corner suggested that we go out for a stroll. I acceded; and we went out into the garden, I still keeping the conversation fixed upon the murder of Madame Arosa, for, although I was pretty sure of my man, I felt that I might convince myself thoroughly before I made the final pounce. Well, as we reached the path by the stream, he suddenly sprang at me, struck me several times with a sharp instrument, which, however, only wounded me as I always wear a steel protector under my outer garments; then he stunned me with a final blow, and when I recovered consciousness, I was lying on my back half in and half out of the stream. Wounded and exhausted with loss of blood as I was, I made all the haste I could, went to my lodgings, changed my clothes, and then hurried on to the Cedars, not quite expecting to see my man, although I thought it possible that, in the full belief that he had killed me, he might remain until the morrow. So I was not surprised to find him not there. Knowing that he could not get out of the country at any rate that night, I determined not to waste a minute, and luckily falling in with a carrier's cart, got up to London. I kept the matter quite quiet, not even informing Scotland Yard of the matter, for I made pretty sure of the capture. But he gave me the slip, he and his precious aunt, for all

that; and it was only six weeks back, that I nailed my gentleman quietly reading his paper in a restaurant on the boulevards. I was on him like a cat, in spite of his assumption of outraged innocence; and next Thursday he makes his last appearance in public on the Place de la Roquette.—By the way, I must have left a pocket-book at my lodgings with valuable information in it of no use to any one but the owner."

"I have it," I replied; "and you must come over and spend your first holiday with us, for I shall never know how to atone sufficiently for the terrible opinion of you which, through me, has been spread out."

"Of me?" said the detective.

"Why, certainly," I replied. "At this moment, in and about Kensham you are believed to have murdered Corner; and until this morning, we believed the same thing."

"Circumstances certainly looked ugly against me," said De Bussy; but you see the success of my movements depended entirely upon absolute secrecy."

"Suppose you had been arrested?" I said.

"The freemasonry among our profession would have prevented that."

Helen still remains at home, for she says that she can never give to another man the love she gave to Corner, although she is heartily thankful for her narrow escape from marrying him. De Bussy paid us his promised visit, and brought with him his wife and Miss Gabrielle, who renewed her abruptly broken-off acquaintance with Mr. Corner's coachman, and married him.

THE END.

EUROPEAN APPETITES.

WHAT LONDON AND PARIS EAT IN A YEAR.

In London and Paris the annual average consumption a head of population is stated to be as follows, the greater quantity in each case being credited to the Parisian: Apples, 65 pounds and 6 ounces—145 pounds; pears, 39 pounds and 5 ounces—170 pounds and 13 ounces; peas, 3 pounds and 8 ounces—6 pounds and 15 ounces; carrots, 7 pounds and 3 ounces—37 pounds; celery, 11 ounces—6 pounds and 13 ounces; cherries, 2 pounds and 13 ounces—20 pounds and 14 ounces; plums and damsons, 17 pounds and 12 ounces—183 pounds and 4 ounces; raspberries, 4 ounces—2 pounds; strawberries, 3 pounds and 10 ounces—13 pounds and 12 ounces; asparagus, 1 pound and 3 ounces—5 pounds and 4 ounces. On the other hand, while the Londoners eat 173 pounds and 4 ounces of potatoes, the Parisian eats only 49 pounds and 4 ounces. The average consumption of onions, tomatoes, cabbages, cucumbers and turnips is also greater in London than in Paris; but, with these exceptions, the French are by far the largest consumers of fruit and vegetables.—*Good Housekeeping.*

IMPURE ICE.

POND ICE LIABLE TO CONTAIN DISEASE GERMS.

The danger of an impure ice supply has been the subject of a very thorough investigation by the Massachusetts State Board of Health, which attributes many cases of typhoid fever occurring in cities in autumn to bad water and the results of bad drainage or none at all, in the summer resorts. The board, therefore, urges upon people who are considering the question where to spend the summer, the importance of selecting places which have proper drainage and pure water supply. In places where ponds are made for the purpose of collecting water for a supply of ice, it is almost certain to be contaminated with sewage, as freezing does not kill but only conceals bacteria. A most mysterious case of wholesale poisoning at a summer hotel was finally traced to the impure ice which had been secured from neighboring shallow ponds. Upon analysis the melted ice was found to contain in suspension, a large quantity of decomposed vegetable matter. The organic matter mostly settled at the bottom of the vessel, but the lighter matter remained diffused through the water. The pond, the source of supply, was examined and found stagnant, and at one end a putrescent mass emitted an intolerably offensive odor. It was reasonably supposed that the ice was the cause of the sickness, and upon its disuse the epidemic abated. Prof. Raphael Pumpelly, who made investigations for the National Board of Health, has no doubt that ice can carry any disease that the water from which it is frozen, can convey, and that there is even more danger from the ice than there is from the water itself, since sewage is more easily decomposed in summer than in winter. While in cities the greater part of the ice received is pure, in towns where the supply is taken from shallow ponds, both the water and the ice may be a source of danger.

DOMESTIC DIETETICS.

SEASONABLE FOOD.

June.

MEATS. — Beef, mutton, lamb, veal, ham, kidneys, liver, sausage.

GAME AND POULTRY.—Pigeon, chicken, duck.

FISH.—Anchovy, bass, blackfish, bluefish, clams, cod, crabs, eels, flounder, haddock, halibut, herring, lobster, fresh mackerel, perch, porgie, prawn, rockfish, fresh salmon, salmon trout, sea bass, shad, sturgeon, turtle, weakfish, whiting.

VEGETABLES. — Beans, carrots, cauliflower, corn, cucumbers, egg plant, garlic, lettuce, onions, parsley, parsnips, potatoes, radishes, rhubarb, savoy, shallots, spinach, sprouts, tomatoes, turnips.

FRUIT.—Bananas, oranges, pineapples, strawberries.

PRACTICAL RECIPES.

PEA SOUP.—Boil to a pulp two quarts of peas, strain them, place in a stewpan four ounces of butter, add two anchovies, a tablespoonful of pounded pepper, twice that quantity of salt, a small handful of parsley and mint, a little beet root and spinach, and stew until tender. Add pulped peas until the soup is of the proper consistency, then throw in a spoonful of loaf sugar, boil up and serve.

CURRIED COD.—Cut some handsome steaks of cod, slice a number of onions, and fry both a good brown color, stew the fish in white gravy, add a large teaspoonful of curry powder, a third that quantity of cayenne pepper; thicken with three spoonfuls of cream, a little butter, a pinch of salt and a little flour.

STRAWBERRY SHORT CAKE.—To one quart of flour add two heaping teaspoonfuls Horsford's baking powder, one tablespoonful white sugar and a little salt; mix thoroughly while dry. Chop up three tablespoonfuls butter in the flour thus prepared. To one large cupful of sweet milk add one egg. Then put the whole together as quickly and with as little handling as possible. Roll into two sheets, each about half an inch thick. Bake in a well greased pan, laying one sheet on top of the other. When done, and while yet warm, separate them and put between the two crusts a thick layer of strawberries, well sprinkled with powdered white sugar. Cut like a pie, and eat with sugar and cream.

DIP TOAST FOR BREAKFAST.—Cut the bread into slices a quarter of an inch thick; trim off the crust and put the slices in an even oven on a tin pan to brown. When well and evenly browned take out and dip the edges quickly into very hot water; butter and serve at once.

FISH ROE SALAD.—Cut the boiled roe of shad or any fish into three slices, and put them in a salad bowl with alternate layers of sliced tomatoes; garnish with crisp lettuce leaves, and serve with French salad dressing.

FRENCH DRESSING.—Take one saltspoonful salt, one-fourth saltspoonful pepper, and mix thoroughly with one tablespoonful olive oil. Add three more tablespoonfuls of the oil and one of vinegar; beat up and pour over salad.

CITRON CAKE.—Three cups of sugar, one cup butter stirred to a cream, one cup milk, five eggs, beaten separately; two teaspoonfuls Horsford's baking powder, thoroughly mixed with four cups flour; one-half pound of citron, finely sliced and floured; stir together and bake.

STRAWBERRY CREAM.—Bruise a quart of fresh strawberries with a wooden spoon in a basin, with six ounces of fine sugar; rub this through a clean hair sieve. Add to a pint of whipped cream two ounces of dissolved isinglass or gelatine; mixed with the strained strawberries and put in the mold.

STRAWBERRY PUDDING.—Beat half pound butter and half pound sugar till quite light, in a basin; add yolks of eight eggs and three-quarters of a pound bread crumbs, which have been previously soaked in milk and passed through a sieve; add to this one quart ripe strawberries, and six whites of eggs beat stiff; steam in mold for one hour; serve with sweet sauce.

LOBSTER OR CRAB CROQUETTES.—Mince the meat of one fine lobster or five or six well boiled crabs; then rub the yolks of two hard boiled eggs into two tablespoonfuls butter, and work this with the meat; add a small quantity of anchovy sauce, one teaspoonful lemon juice, salt, and a pinch of mace for seasoning, and finally mix in half a cupful fine bread crumbs. Make into oblong balls and fry quickly in dripping or a mixture of lard and butter. Drain thoroughly by rolling each for an instant very lightly upon a hot clean cloth. Serve in a hot dish, accompanied by milk or cream crackers and slices of lemon for those preferring it.

VELVET CREAM.—One and a half ounces of gelatine; pour over it one and a half cupfuls of wine, two teaspoonfuls of lemon extract and rind of one lemon. Let it stand one hour. Add three-quarters of a pound of sugar, and place over the fire, stirring until all is dissolved. Strain it, and when cool pour in one quart of thick cream, beating hard while pouring. Set to cool.

REVIEWS OF NEW BOOKS.

THE INFECTIOUS DISEASES. By Karl Liebermeister; translated by E. P. Hurd, M. D. 2 vols. Detroit: Geo. S. Davis.

The work before us constitutes volumes VIII. and IX. of the "Physician's Leisure Library," second series, a valuable collection of standard reprints of medical works, gotten up in a neat and attractive shape, which deserve a place in every physician's office. The publisher's purpose is to present to the busy practitioners of the United States a series of convenient and useful hand-books of treatment of a practical character. The present book is the well known clear and concise treatise of Professor Liebermeister, of Tubingen, Germany, one of the most uncompromising adherents of the germ theory of disease. It originally appeared about three years ago, and embodies the fruits of twenty-five years of earnest study and careful observation. The first volume consists of the two chapters on malaria and typhoid fever. The second enters more fully into the details of contagious diseases: small-pox, varioloid, rubella, measles, scarlet fever, and diphtheria. The translation is ably done, the American editor having added numerous notes, setting forth more particularly

the American method of treating intermittent fevers and presenting considerations relative to the cold bath treatment of typhoid fever. The object has been to indicate in this manner whatever advances have been made in those particulars since Prof. Liebermeister's work was first published.

ALDEN'S MANIFOLD CYCLOPEDIA. Vol. IV. New York: Provident Book Company, 393 Pearl St.

The fourth volume of this useful cyclopedia is at hand, carrying the subject matter nearly through the letter "B." We feel justified in according the highest praise to this enterprise, as the subjects are treated with satisfactory completeness to cover every practical requirement of the reader, and their number is almost equivalent to the number of words in the language. It in fact constitutes a dictionary as well as a cyclopedia, the definitions being mostly drawn from Stormouth, which is a standard in all pertaining to conciseness and accuracy, while the scholarship embodied in Chamber's contributes the wealth of information condensed in the various headings treated of at greater length. No authorities, however, the publisher informs us, are followed blindly, but careful effort is made to bring all matters discussed to the generally accepted standard of the most eminent American, rather than foreign scholarship.

PAMPHLETS, ETC., RECEIVED.

SKELETON NOTES UPON INORGANIC CHEMISTRY. Part I. Non-Metallic Elements. By P. de P. Ricketts, Ph.D., and S. H. Russell, E. M. New York: John Wiley & Sons, 15 Astor Place.

INVESTIGATING ADULTERATIONS.

LATEST REPORTS FROM THE DEPARTMENT OF AGRICULTURE.

Since our last issue an important communication from Washington, relative to the relation of the Government to the Food Adulteration question, has appeared in the *Commercial Bulletin* of this city, from which we quote the following:

The investigation of the general subject of the adulteration of food products throughout the country is being comprehensively carried on by the U. S. Department of Agriculture, and important and interesting information is being gathered. In addition to the bulletins already issued on adulterations of spices, beer and similar beverages, and on sugar, honey, candy and molasses, the Department has about completed its investigation of adulterations of lard. The inquiry is so nearly complete that Professor Wiley, who has the matter in charge, spoke freely to your correspondent in regard to its results. The investigation has gained special significance in consequence of the sensational allegations and loose statements before the Congressional Committees, and the efforts to make lard adulteration an excuse for a repetition of the oleomargarine enactment. Professor Wiley says that the investigation has been extended as widely as possible, and has rendered the results quite definite. It has indicated that about one-half the entire amount of lard placed upon the market is compound or adulterated lard, into which other ingredients than hog's lard enter. The compound article on the market is almost exclusively the product of two or three firms, whose formulas are now pretty generally known and whose product is wholly free from any suspicion of being injurious to health. The percentage of adulteration varies very widely, being as great as forty per cent. in a large portion of the lard on the market and about twenty per cent. in other brands largely sold. The small producers do not adulterate, and the pure lard men furnish fifty per cent. of the entire trade.

The more sensational aspects given to the matter by testimony before the committees he believes to be without the slightest foundation. He is specially emphatic in the belief that no question of protection to the public health is involved. Lard adulteration is, to a great extent, openly and avowedly practised in accordance with commercial agreements. As to other branches of the pending investigation, Professor Wiley says the inquiry as to the adulterations of tea, coffee and sugar is well advanced, although not yet so comprehensive as to justify a general statement of results. It has shown that both imported and domestic teas are largely adulterated. This is mainly true of the cheaper grades, where adulteration is customary rather than exceptional. The extent of the adulteration of imported teas varies with the vigilance and thoroughness of the work of the Government tea inspectors. Adulterations consisting of the introduction of leaves of other plants can readily be detected by the inspectors, and the importation of teas adulterated in this way can to a great extent be prevented. There has, however, been of late a decided increase in the use of spent or exhausted tea leaves, which have once been used and then redried and mixed with tea leaves retaining their strength. This has been, perhaps, the most general and serious form of tea adulteration, and defies the microscopical tests, although other tests are practicable which readily detect the imposition. The practice of mixing the good with the spent tea he believes to be carried on quite extensively, before and after importation. There must be some system of securing these spent leaves from hotels and other places where they are used in large quantities.

As to coffee adulteration, Professor Wiley says the current belief in the prevalence of adulterations is amply justified. The use of a variety of adulterants has already been detected and the proportion of adulterated coffee in the market is apparently large.

Chocolate is also found to be extensively adulterated and with a variety of oils. Olive oil is largely used for the purpose.

In response to an inquiry as to the extent and effects of food adulterations, as indicated by his general investigations, Professor Wiley replied that he was satisfied that food adulteration has extended to every article in which it can be profitably practiced, and that the extent to which it is carried on can scarcely be exaggerated. He was, however, equally well satisfied that in very few instances do the adulterations involve detriment to health. In many cases he was convinced that the product was rather improved by adulteration, or the substitution of some article equal or superior in quality but less likely to command the market at equal profit.

As to the method of dealing with the question, Professor Wiley has become fully satisfied that repetitions of the oleomargarine experiment will not accomplish any useful purpose. He believes the operation of that law to have demonstrated the inadvisability of its extension to other food products, but is of the opinion that some form of general pure-food legislation may be feasible as apart from the power of taxation. Although his investigations are based upon collection of samples from as many sources as possible, and thus serve to indicate the extent and character of adulteration, he very justly attaches much greater importance to the success of his efforts to devise simple and ready means of testing and detecting adulterations than to the mere exposure of their prevalence. He declares the great purpose of his work to be the publication of a series of tests by which organizations, and even individuals dealing to any considerable extent in food products, can secure ample assurance as to the character of the article purchased. In assisting to eliminate the element of misrepresentation and fraud by facilitating the means of accurate knowledge of the character of products on the market, he believes that the great purpose of pure-food legislation is being accomplished on a more natural and effectual basis than that of restrictive legislation.

WELL TO KNOW.—Mosquitoes, flies and gnats may be kept away by sponging the face and hands with elder flower water.

THE PHONOGRAPH.

PROBABILITIES AND POSSIBILITIES OF ITS PRACTICAL UTILITY.

The latest development of the phonograph, exhibited at the laboratory of the inventor in Orange, N. J., is rich in both results and promise. In the experiments with the instrument, a pianoforte, a violin, a cornet and a clarionet were played separately and together, and the reproduced tones were often startling in their faithfulness. For instance, the vibration of strings, which is more of a noise than a musical sound, came back with the more agreeable tone. In the matter of power it was found that the cornet was most accurately reproduced, and that even, with the aid of a funnel for magnifying the sound, the tones of a pianoforte sounded as though heard through a partition wall. There are sundry other defects that will have to be overcome before the instrument shall answer the hopes or indeed the purposes of its inventor. But enough has been accomplished in the way of mechanical details to warrant the taking of orders for machines for commercial uses. Although it is evident that these cannot be used where there is a diversity of noises, they will probably be found available substitutes for stenographers in some cases. The written letter, however, will always be first in value in mercantile houses or lawyers' offices. An artistic use for the invention will probably be the reproduction of performances by great artists. Even if it give but echoes, and faint ones at that, it will serve to show how a famous pianist phrased this concerto, or at what rate a noted conductor led that symphony, and so on. It may carry to remote places, where there is no music hall or opera house, the Beethoven symphony or the Wagner music drama, which otherwise might be as a sealed book to the music lover. It may bring back to the old echoes of their youth—not always agreeable ones, perhaps—so that with a few turns of the crank the vanished years return, and time itself seems to pause, if not to wing his flight backwards. It may—but let the poet or the man of sentiment catalogue the possibilities. The newspaper has done its share in printing the record of results already achieved.

TALES OF THE TEETH.

ALL SORTS OF SUPERSTITIONS CONCERNING THEM.

The teeth and the aches to which they give rise have been subjects of many strange ideas among uneducated people. Teeth have even been worshiped, and are still venerated as relics in some Catholic shrines. Buddha's tooth is preserved in a temple in India, and Ceylonese worshipped the tooth of a monkey, while an elephant's tooth and shark's tooth served a similar purpose among the Malabar Islanders and the Tonga Islanders respectively. Siamese valued a monkey's tooth so highly that they are reported to have offered the Portuguese 700,000 crowns for it. There was a tradition that, from the time Chosroes, the Persian, carried off a piece of the true cross from Constantinople, the number of teeth in the mouths of men were reduced from thirty-two to twenty-three. It is needless to say that we still have thirty-two. Teeth have often been worn as amulets. Sharks' teeth serve this purpose in Samoa. It was formerly thought that a wolf's tooth, worn in a bag about the neck, would chase fear away from the possessor. The back tooth of a horse, found by chance, will, say the Irish, keep you supplied with money. There are many omens connected with infants' teeth, as well as those of adults. If a child teethe early, it is thought, in England, to predict more children. "Soon teeth, soon toes," is the adage, both in that country and in Sweden. If a tooth comes first in the upper jaw it is, on the contrary, an omen of early death, as the child cannot sur-

vive so potent a disaster. An old work, published in 1633, tells us that to lose a tooth or an eye is also to lose some friend or kinsman, or is, at least attended by some ill luck. He who has his teeth wide apart is there said to be attended by good luck. Breton mothers will not touch infants' gums, lest the teeth grow crooked. To dream of teeth was a warning of some disaster, unless you dreamed they fell out. The period of teething being an anxious one in childhood, it is extremely important to have it over with. In Sussex, England, a necklace of beads made from peony root, was placed on the child's neck to assist this operation, and one of amber beads was also thought powerful. It was also said that first teeth must not be thrown away when they fall out, for if any animal got such a trophy the next tooth would be like that of the animal finding the old one. In Nova Scotia, and in some parts of the United States, children are told that the new tooth will be a gold one if the tongue is kept out of the old cavity. Folk lore is full of odd notions about the toothache, and many queer remedies are current for it. It was once thought to be caused by a worm. One of the most potent remedies was thought to be a charm of some kind or other. In England this charm is a rhyme or prayer written on a piece of paper. Verses for this purpose are current in Germany to this day. St. Appollinus was especially invoked for this malady in the thirteenth century. A work published in 1595 prescribes the following remedy: The patient was to inhale the smoke from a vessel in which dried herbs were mixed with live coals. He must then breathe over a cup holding water mixed with wax and serum, when it was said that a worm, the cause of the trouble, would appear in the cup. Nearly a century later we find another strange remedy: "With an iron nail raise and cut the gum from about the tooth until it bleed, and that some of the blood spill upon the nail. Then drive it into a wooden beam up to the head. After this is done you never shall have the toothache in all your life." Another old writer of the same period, Aubrey, gives popular remedies for the toothache. A splinter of wood from a gibbet was thought efficacious in the north of England, while in Devonshire it was thought best to bite a tooth from a skull in a grave yard, and carry it in the pocket as a charm. In another part of England, an equally ghastly amulet was a tooth drawn from the mouth of a corpse, carried in the pocket. The paw of a live mole or a double nut were also prescribed as preventive charms. To dress the left foot and leg before the right is equally effective. Some of the Irish cures for the toothache were fully as ghastly as those cited above. One of these empirical recipes bids you go to a grave, kneel upon it, say three paters and three aves for the soul of the dead, then chew a handful of grass taken from the grave, spitting it out. The toothache will never after trouble you. Another remedy is to vow never to comb your hair on Friday, invoking the Creator, the Virgin, and the new moon. You may afterwards neglect the two first, but must kneel and say five prayers on first beholding the new moon. The two jaw bones of a haddock have been powerful in allaying the toothache ever since the miracle of the loaves and fishes. If you wish to avoid the toothache, say the sons of Erin, never shave on Sunday.

AUSTRALIAN INCUBATORS.—In Australia and the neighboring islands are seen many large mounds of earth which were formerly supposed to be the tombs of departed natives. These remarkable tumuli, reaching as much as fifteen feet in perpendicular height and sixty feet in circumference at the base, are not the work of man, however, but are now known to be the incubators built by the jungle fowl and other species of the small family of megapodidæ, or great footed birds. Each of these great piles consists of fallen leaves, grasses, etc., which the birds deposit in place by throwing backward with one foot. Though the mounds are usually in dense shade, the decaying vegetable matter has been found to raise the temperature at the centre as high as 95 degrees. The eggs are carefully placed with the larger end up, about twelve inches apart, and are all covered to a depth of at least two or three feet.

VINEGAR.

THE DIFFERENCE BETWEEN THE CHEAP AND THE GOOD.

There are good vinegars in the market; there are are also those which are indifferent, bad, and very bad. The latter are the more common. The best and most wholesome are those made from cider and wine. These retain suggestions of the apples and grapes from which they originally came. If carefully kept they remain palatable for an indefinite period; if carelessly, they, like every good food substance, are apt to become mouldy and unwholesome. From a gastronomic standpoint, the best vinegar is that which is made from red wine; next to it are those made from white wine, elder and perry. The first is invaluable in salad dressing, on account of its beautiful color; the second is most useful in those preparations where no color at all is desired; the third is available for all general use, and the last comes to the front whenever the delicious jargonelle flavor is conducive to the culinary success. Below this first class are the vinegars made from ale, beer and whiskey. These are coarse, heavy, and often offensive. They never, except in the case of whiskey, are made purposely, but represent the desire of some brewer or distiller to utilize goods which have been ruined by careless treatment, and which would otherwise prove a total loss. The ale that sours in the barrels and hogsheads, the beer that begins to putrify in the vaults, and the wretched whiskey which is so full of fusel oils that no dealer, not even the lowest, will purchase it at any price, are the raw materials from which this class of vinegars is made. They cannot be said to be injurious, but they are simply miserable apologies for the real article. In this country a malt vinegar is made from mashed malt without distillation, but by simply allowing the sugar fermentation to go to an acetic fermentation. It may also be stated that there is nothing equal for domestic use to a good cider vinegar. Below the grade of whiskey vinegar are the vinegars made in the laboratory by chemical processes, and especially by the destructive distillation of wood. Unless skillfully refined and purified they contain creosote, wood tar, and other products of the same class, all of which are injurious, many of which are poisonous, and some of which are fatal to the user. They have one advantage, and only one—they are cheap. They bear the same relation to genuine vinegar that myrbane oil does to bitter almonds, glucose to pure sugar, sweetened dilute oil of vitriol to lemonade, and lard oleomargarine to fresh creamery butter.—*British Journal of Catering.*

THAT'S WHAT'S THE MATTER.

A plainly dressed man who introduced himself as Mr. John Smith walked into a doctor's office, and, having explained his symptoms, asked the doctor how long it would take to cure him. The doctor, who had treated the visitor with every possible courtesy, replied: "You will require several years' careful treatment under my personal supervision before you are perfectly well; but I think, Mr. Smith, you will be able to resume your labors in the bank in about two months." "Doctor, you are fooling yourself. I am not Smith the banker, but Smith the street car driver." "Is that so? Well, my good fellow, I don't see what you came to see me for. There's nothing the matter with you, except that you are not a banker."

A LARGE MILL.—The largest cotton mill in the world is in Russia. It gives employment to 7,000 hands.

VEGETARIAN HOTEL.—A vegetarian hotel is an innovation in London. There are already thirty vegetarian restaurants in that city.

CHEAP EXTINGUISHERS.—According to insurance statistics more fires are extinguished by the use of pails of water than by all other means.

IN FAVOR OF EUROPE.—It is claimed that the deaths and wounds from railroad accidents are only about one-fourth as great in Europe as in this country.

RUSSIAN PETROLEUM.—The Russian petroleum is said to be vastly inferior to the American, emitting an unpleasant odor and a black smoke even when used in the best of lamps.

DEAF ANIMALS.—Evidence exists that deaf mutes are not confined to the human race. In a farmer's herd for twelve years was a cow which never gave any sign of hearing, and the evident attempts of which at lowing had only resulted in a feeble guttural. Nothing abnormal could be discovered in the ears nor the vocal organs.

NAPHTHALINE.—As a wood preservative naphthaline is now largely used in Scotland, its action being to destroy all the albuminoid compounds in the wood, leaving it dry and clean to handle, and with only a faint aromatic smell. The naphthaline is melted in a vessel capable of being tightly sealed, and in this the wood is saturated.

CLOCKWORK PRINTING.—An interesting development in photography is in the use of clockwork in printing from negatives. By this means a continuous web of sensitized paper is drawn at suitable intervals under a negative exposed to a source of light. After printing the paper is drawn still by the mechanism, through "washer," "toner" and "fixer" successively, and appears finally as a series of finished pictures ready for mounting, and all alike in exposure, color and tone.

DUST SHOWERS.—Showers of greyish and reddish dust off the African coast and over southern Europe have been known from Homer's time. A "blood rain" in 1755 covered 200 square leagues of northern Italy, making a deposit an inch deep in places; and a dust fall near Cape Ferde, described by Darwin, was 1,600 or 1,800 miles wide, and reached 800 or 1,000 miles from the coast. A shower of dust near Lyons in 1841 was estimated by Ehrenberg to amount to 730,000 pounds, one-eighth being microscopic organisms. The red color is due to oxide of iron.

A BOSTON MOTOR.—A novel application of the electric motor is in use running the vertical panoramic signs on Court Street, Boston. A three horse power electric motor does the work and does it efficiently, although the heavy canvas signs are each twenty feet wide, twenty feet long. An ingeniuus contrivance at the motor reverses the motion of the canvas when necessary. This "ingenious contrivance" was investigated recently, and found to be a very affable specimen of the genus homo. There is certainly a field there for an inventive genius to do this work automatically, and allow the biped to descend from his lofty perch.

NEW FIREPROOF LIQUID.—Pyrodene is a new liquid which renders wood, textile fabrics, paper and such inflammable materials fireproof. The liquid is made of all colors, so as to be used as a substitute for paint; and it is said to render houses and other outbuildings fireproof. Was used for fireproofing the woodwork of the recent Jubilee Exhibition at Manchester. Washable water paints called "aquol" are also produced by the same inventor, Mr. T. Griffiths, F.C.S., and they can be applied direct to metal work. They contain no oil, and may be washed with water, while on the other hand they do not blister in the heat of the sun. The paint is stated to be more expensive than ordinary paint.

CULTIVATING SPONGES.—Sponge culture, like pisciculture and oyster culture, seems to be an assured success. From a report made by Professor O. Schmidt, of Gratz, to the Board of Trade of that town, we learn that the professor has succeeded in raising large sponges in the course of three years, simply by planting small bits of living sponge in favorable spots on the coast of Dalmatia. With a capital of only 225 francs (about $45), the crop of sponges thus obtained was 4,000 in number, and of a value of nearly $800. The Austro-Hungarian government has authorized the new industry to proceed, and to utilize any portion of the coast fit for the purpose.

SIBERIAN METEORS.—Foreign scientists have discovered minute diamonds in meteorites found in Siberia.

A LARGE COLLECTION.—More than 200.000 bird skins are now shown at the Natural History Museum in London.

A NEW FIBRE.—A new vegetable fibre, called "gamootie," is imported from Celibes into Holland, and is made to take the place of moss and in upholstery.

SILK FOR STEAM PIPES.—Waste silk has been shown to be the most effective non-conductive covering for steam pipes. The price is high, but the demand is very great.

HEAT AND GERMS.—The direct action of steam at 212 degrees is sufficient to destroy all germs in from five to fifteen minutes. The efficacy of heated dry air is uncertain.

WHERE THE IRON GOES.—Railways are said to consume more than half the world's production of iron, the car wheels required in the United States alone taking more than two million tons.

THE LARGEST FLOWER.—The largest known flower is the Rafflesia, a native of Sumatra. It measures three feet in diameter, weighs fifteen pounds, and has a calyx holding six quarts. The odor is offensive.

THE MASTODON.—There are thirty described species of the mastodon. The most perfect skeleton known was disinterred near Newburg, N. Y., and is now in the Museum of Natural History in New York.

AMERICAN PAPER.—The remarkable finish of American papers is imparted by the addition of a mineral called "agalith," a silicate of magnesia somewhat resembling asbestos in texture. It is found only in the United States.

COAL TAR COLORS.—About 150 colors are now obtained from coal tar, which has almost entirely supplanted vegetable and animal dyes. Indigo and logwood are the only two of the latter class now considered of much importance.

CONDENSED SMOKE.—A Vienna engineer has just taken out a patent for a new smoke abating process. By means of electricity he proposes to condense the solid part of the smoke as it arises from the coal, the carbon thus formed falling back into the furnace.

EXTREMES MEETING.—Fort Keogh, Montana, can claim the honor of showing the widest range of temperature of any place on earth. Last summer the thermometer ranged from 120 to 130 degrees above, while recently it marked 65 degrees below zero, a total range of 195 degrees.

TOMATO VINEGAR.—A patent has been granted in England for the manufacture of vinegar from tomatoes. The fruit, when ripe, or nearly so, is reduced to a pulp and steeped in water for twenty-four hours. The liquor is drawn off, sugar added, and the whole allowed to ferment.

SILVER IN WHITE LEAD.—Silver, generally a very desirable metal, is a source of great annoyance in the manufacture of white lead, for if present in an appreciable quantity it will spoil the color of the finished product, owing to the well known blackening effect of light upon the salts of silver.

UTILIZING A MAGNET.—An electro magnet with a carrying capacity of 800 pounds, is attached to a crane in the Cleveland Steel and Iron Works, which readily picks up billets and other masses of iron without the aid of any other device. A boy is thus enabled to do the work of a dozen men.

WATERING PLANTS.—Persons whose plants mysteriously sicken and die are warned by Dr. J. W. L. Thudicum, in a communication to the London Society or Arts, that only pure water must be used in watering them. Impure water breeds a sort of fungus at the roots, which soon destroys them.

A SELF RECORDER.—An instrument, called the autographometer, has lately been devised, which autographically records the plan of the ground over which it is dragged. It can be carried about on a light vehicle, and when in use indicates the topography and differences of level of all places over which it passes.

IMPORTED WEEDS.—Of eighty-eight species of weeds described by Mr. L H. Pammel, of St. Louis, as growing in southwestern Wisconsin and southeastern Missouri, forty-six are of European and thirty of American origin. One-third of the latter class, and nearly one-fourth of the entire list, are composites.

NEW USE FOR STALE BREAD.—A safe, sure and certain cure for corns is said to be found in a poultice formed of stale bread soaked in strong vinegar. It should be applied at night on retiring. In the morning the soreness will be gone, and the corn can be picked out. Obstinate corns may require two or more applications.

CONDITION WHEN DRY.—A German trade journal recently contained the following advertisement: Wanted for the sale of oil and varnishes, several travelers on commission. The latter, when in a dry state, are bright and hard, they do not crack or peel off, and are sold in bottles and jars bearing the brand of our firm on the outside."

OLD OIL.—Oil seems to wear out by long continued use, and to lose to some extent its lubricating qualities. It has been suggested as a reason for this that the minute spherical globules of which the oil is conceived to be made up become flattened by the wear and pressure, and so do not slide and roll over each other as easily as before.

DELICACY OF TASTE.—In recent tests on forty persons one part of salicine was tasted in 12,000 parts of water; of morphine, one in 14,000; quinine, one in 76,000; quassine, one in 90,000; picrotoxine, one in 197,000; alvine, one in 210,000, and strychnine, one in 826,000. Twelve tasters detected one part of strychnine in 1,280,000.

SERVICEABLE MORTAR.—Mortar made in the following manner will stand if used in almost all sorts of weather. One bushel of unslaked lime, three bushels of sharp sand; mix one pound of alum with one pint of linseed oil, and thoroughly mix this with the mortar when making it, and use hot. The alum will counteract the action of the frost on the mortar.

AUTOMATIC CANDLES.—A new candle has been brought out which extinguishes itself in an hour. This it does by means of a tiny extinguisher of tin, which is fastened in the wax by wires, and which effectually performs its task. It is only necessary to remove this diminutive extinguisher when its work is done, and the candle is again ready to burn another hour.

AGE OF THE EARTH.—According to geological computations, the minimum age of the earth since the formations of the primitive soils, is 21,000,000 years, allowing 6,700,000 years for the primordial formations, 6,400,000 years for the primary age, 2,300,000 years for the secondary age, 400,000 years for the tertiary age, and 100,000 years since the appearance of man upon the globe.

TOOTH ATROPHY.—Dr. Julius Pohlman thinks the reason why our teeth decay so fast is because we do not use them enough, and like other organs that are not exercised, they tend to atrophy. Our teeth become weak because unused to hard work. The author warns mothers and nurses not to give the children soft food if they would have them have good teeth—in other words, make them eat their crusts.

ELECTRIC LIGHT.—Dr. Renk, of Munich, has been experimenting on the utility of the electric light, from a sanitary stand point, in the National Theatre of Munich. He found that the electric light had hardly any influence on deterioration of the air, whereas the gaslight raised temperature of the room, deprived the air of its oxygen, and rendered it injurious by increasing the carbonic acid, especially in the higher regions.

RUSSIAN PHARMACISTS.—The report of the Russian Pharmaceutical Society for 1887 says that in the laboratory of the association during the past year 309 analyses and examinations were made, for which the munificent sum of 1,920 roubles (about $960) was allowed. The astonishment of the reader is not excited by learning that there were only four students in the School of Pharmacy, which is under the protection of the association.

VALUABLE ELECTRICAL WELDING.—The electric welding of Prof. Elihu Thomson is rapidly developing into a great business. The practical uses to which this invention can be applied are very numerous. Besides its value in factories for the repair of tools and shafts and in general "job work" among machinists, it is adaptable to many forms of manufacturing. In steam and gas fitting, or plumbing, employing either copper, lead or cast iron pipe, as well as in electrical fitting, it will prove invaluable.

ELECTRICAL HEATING.—Five patents have been issued to a Baltimore electrician for methods and apparatus for heating by electricity. By this system dwellings can be supplied with heat from central generating stations by the same conductors that supply the current for the incandescent electric lights. The patents include inventions for private heating from central stations, and special methods for heating and lighting railway cars. Patents covering applications for domestic and industrial operations are still pending.

GERMAN CARVERS.—Berlin, it seems, has gradually become the headquarters of the carved wood industry, supplanting Switzerland. Six hundred artists in wood carving, the same number of turners, and 700 carpenters, are engaged in manufacturing such articles as cigar cases, newspaper and picture frames, napkin rings, etc. The value of the annual export of these articles is given as 5,000,000 marks, and this is exclusive of the costly carved wood furniture, the manufacture and export of which are assuming large proportions.

MUSTARD OIL IN LUBRICATION.—M. Thier, an engineer of Erfurt, Germany, after experimenting for months to find a lubricator which would prevent a welding together of iron surfaces upon which much and rapid friction is exercised, such as turbine wheels, has found that ordinary oil of mustard, mixed with small quantities of petroleum, fish oil or other similar fatty substances, answers the purpose in every respect and overcomes all the difficulties heretofore experienced with machinery where excessive friction disturbs the physical quality of the metal used.

PHOTOGRAPHY IN COURT.—Photography is gaining prominence in the criminal courts. With its help a Berlin merchant was lately convicted of crooked ways in keeping his accounts. The slightest differences in color and shade of inks are made manifest in the photographic copy. Blue inks appear nearly white; brown inks, on the contrary, almost black. The books of the accused were submitted to a photographer, who took off the pages concerned and brought into court the most undoubted ocular proof of the illegitimate after-entry of some of the accounts. A subsequent chemical test substantiated this evidence. The photographic is to be preferred to the chemical test, because it brings its proofs into the court, and submits them to inspection, at the same time leaving the document under examination unharmed; while the results of a chemical test must be taken on the evidence of the chemist alone, and the writing examined is perhaps destroyed. In another case similar to the above the changing of the date of a note by an insignificant erasure and addition was proved by means of photography.

THE LABORATORY.

To Inventors, Manufacturers and Applicants for Patents

The AMERICAN ANALYST may be consulted upon all matters involving theoretical or applied chemistry. Advice and opinions given. Analyses and assays made. Patents perfected and secured. Terms reasonable.

Address, AMERICAN ANALYST,
19 Park Place, N. Y.

NEW YORK TO THE FRONT.

A MATTER WHICH CONCERNS YOU.

The following unsolicited opinions from your friends and neighbors, men and women whom you know and respect, ought to carry conviction to any doubting mind. These words of gratitude are from those who have been afflicted but are now well, and the persons giving them are naturally solicitous that others, troubled as were they, may know the means of cure. There is no reason why you should longer be ill from kidney, liver or stomach troubles. You can be cured as well as others, do not longer delay treatment, but to-day obtain that which will restore you to permanent health and strength.

NEW YORK (143 3d Ave.), Feb. 19, 1888.—After using "Warner's Safe Cure," I take pleasure in stating that I have found it the greatest remedy for the kidneys in the world. I would inform you that I followed the profession of a "pedestrian" for upwards of twenty years, and am proud to state that I retired as Champion Endurance Pedestrian of the world. I then became manager of Walking and Bicycle Matches. The severe strain told upon my kidneys. I suffered untold misery. I was induced to try "Warner's Safe Cure," and after taking six (6) bottles, I am enabled to say I am better than I have been in ten years. I will with pleasure answer any parties who may desire information.

Harry Brooks.

BROOKLYN (458 Henry St.), Jan. 31, 1888.—Last summer I suffered much from malaria, and was recommended by a friend to try "Warner's Safe Cure," and am pleased to say it worked a most successful cure.

James D. Clancy

NEW YORK CITY (157 W. 23d St.), Jan. 25, 1888.—For about 10 years, up to three years ago, I was suffering the most excruciating and unbearable pains in the left side, continually belching up wind, with a tired and languid feeling. I am a conductor on the Elevated Railway, and was when I commenced taking "Warner's Safe Cure." I used to lose on an average four days every month with these horrible pains. I tried lots of doctors and lots of medicine, but of no avail, until a friend came along and t[illegible]e about "Warner's Safe Cure." I think I took about 18 or 20 bottles, entirely driving the pain away, relieving me of that languid feeling, giving me a better color and good appetite.

Abraham C Johnson

NEW YORK (No. 30 E. 22d St.), Feb. 3d, 1888.—My son has been taking "Warner's Safe Cure" for two years, and he seems to be entirely cured of his trouble, which the doctors pronounced at that time Bright's Disease.

H. M. Libbe

BROOKLYN (141 Myrtle Ave.), Feb. 19, 1888.—I have been employed on the Union Ferry Co. since 1848, and enjoyed good health until I was ruptured 23 years ago. Five years ago I was cured of the rupture, and then taken with Hydrocele and was operated on by Dr. Burnham, of New York City, the last operation being performed in 1886, at 212 Pearl St., Brooklyn. Since that time I have had a gathering of water in the stomach and weakness of the kidneys. Last fall I was recommended to take "Warner's Safe Cure," and since that time I have found great relief in my kidneys and stomach.

Capt John Cole

GOING INTO THE COUNTRY.

It is safe to say that every summer at least five million people who reside in the cities of the United States leave home and pass a few weeks in the country. The practice is praiseworthy in every respect. It tends to change daily habits, diet, hours and modes of thought. It brings the body into contact with more sunlight and fresh air. It substitutes the health giving influence of nature for that of brick walls, close houses and stony streets.

If such be the case theoretically, why is it not borne out in practice? Why do so many persons bring back from the country disease instead of health, impaired instead of repaired constitutions? What is it that so interferes with the full fruition of the enjoyment which nature affords? A slight examination will show that the discrepancy arises from two causes—one the difference in surrounding conditions between city and country life, and the other, ignorance, or carelessness on the part of the individual to be benefited. City life, except in those cases where science and medicine are constantly called into requisition, is in the main unhealthful. The long hours in the counting house and office, and, still more, those in parlors and ball rooms, the cramped and crowded quarters rendered necessary by a dense population, the universal dust and dirt produced by trade and manufacture, the intensity and pressure of life—all tend in a terrible way to age human beings before their time and to produce first unhealthful conditions of the human system. The muscles slowly become weak and flaccid; the blood becomes charged with impurities; the skin loses its normal pink and white color, and either assumes a sodden grayish or yellowish hue, or else breaks out in unsightly rashes and other cutaneous disorders; the vital functions weaken; the appetite and digestion fall off; the bowels and kidneys refuse to act promptly; constipation and a mild uremia make life wretched, and malaise, or malaria, are said to have set in. In this condition—which marks two out of every three adults and three out of five children—the individual goes to the country in the hope of regaining perfect health and strength. The mere excitement produced by the change from streets and buildings to fields and forests is enough to bring on some attack. If a person has a weak circulation, malarial fever may occur; a weak assimilative system, diarrhœa or dysentery; an impaired liver, colic, cramps or other hepatic troubles. Besides the change, other causes of trouble threaten the newcomer. The germs and vapors from swamps and decaying animal and vegetable matter; the hardness of drinking water, especially in limestone and magnesian countries; the heavy dews, and the increased physical exertion required, each and all are conducive to illness, if not productive of disease. From these spring such disorders as fever and ague, kidney complaints, skin eruptions, colds, rheumatism and neuralgia.

Nevertheless, it is not difficult to cure these ills, but far easier to prevent them. Purify the system, cleanse the blood and invigorate the vital functions and the troubles mentioned will never appear. To achieve this result, one simple scientific preparation should be used, and that is the famous Extract of Sarsaparilla made by Dr. J. C. Ayer & Co., of Lowell, Mass. It is made from the finest Honduras Sarsaparilla root and other equally valuable ingredients, and is rendered more efficacious by the double iodides. Its formula and constituents have been recommended by physicians and chemists of high standing, and it still remains the acknowledged best, purest and surest blood purifier known to medical science. Its use renders city life salutary and happy, while it makes a summer in the country something to be looked forward to with anticipations of delight and ever increasing strength and health.

OUR MISSION.

WHAT THE AMERICAN ANALYST IS DOING.

FIGHTING ADULTERATION.

The steadily growing favor which the AMERICAN ANALYST is constantly receiving at the hands of both the reading and the business public is the best evidence that could be afforded of the useful field of effort it occupies. It was the pioneer journal in this country to take up the fight against adulteration, and stands to-day, by public acknowledgment, the only competent exponent of the principles involved in that momentous struggle. To this end the realm of sophistication and fraud has been thoroughly explored, and its corruptions, as far as practicable, exposed to the public view. Charlatans, adulterators, and handlers of poisonous food have been summarily and uncompromisingly dealt with. Humbugs seeking to enrich themselves, through the sale of high-sounding specifics for human ailments, have been subjected to the crucial test of thorough chemical analysis of their goods, and where the latter, as too frequently occurred, proved to be utter frauds in name, composition, and pretended effects upon the system, the real facts have been placed before our readers in order to save the public from further unconscious imposition. The veil of chemical mystery in which tricksters of this kind ostentatiously envelop their processes of manufacture, protects them as yet from the criminal laws to which other confidence operators are held amenable, and the only method for counteracting their nefarious schemes is through public exposure by the newspaper press. In exposing this species of fraud, the AMERICAN ANALYST has conferred a benefit upon the community, to which the latter is giving grateful and substantial recognition.

SANITARY AND FOOD REFORMS.

In addition to the foregoing, the AMERICAN ANALYST is in constant co-operation with the Boards of Health of this and other cities, in efforts to secure sanitary and food reforms through organized methods, and while it is nobody's mouthpiece, it is conceded to be the only popular medium through which those bodies can bring their purposes and action intelligently before the general public. Reaching as it does all classes, manufacturers, merchants, physicians, chemists and private families all over the land, its influence is exerted over a vast radius, producing results as visibly marked as they are widespreading.

HOUSEHOLD MATTERS.

"Domestic Dietetics" is a department of special interest to ladies. It is very different and far superior to the ordinary cook book in that it tells the housewife suggestively what to buy, what foods are in season, as well as how to prepare the many varieties of dishes, all in a practical way easily followed. Other matters of great interest to housewives are also discussed.

PRACTICAL DISCUSSIONS.

Numerous other interests are also faithfully represented in our columns, such as the regular series of articles entitled, "Some Every Day Suggestions," relating to common experiences of society, the question of hygiene, and an infinite variety of practical subjects. In short, the AMERICAN ANALYST always keeps abreast in giving the fullest information on all matters directly or indirectly in the line of its proper field.

SCIENTIFIC INVESTIGATION.

The business transacted in the office of the AMERICAN ANALYST does not by any means all come to the surface in the pages of the paper. Minute analyses of chemical compounds, careful assays of minerals, examinations of questionable oils or doubtful condiments, and the many subtle operations incident to laboratory work are constantly required of us by correspondents far and near, and the results in many cases are not publicly recorded. In this manner, the influence of the paper encompasses a vast radius, from every point of which we receive constant expressions of approval, verbally, and in more substantial shape.

SUBSCRIPTION $1 PER YEAR.

Considering the amount of practical information regularly embodied in its contents, together with the fact that the subscription price for an entire year is only one dollar we believe the day is approaching when the AMERICAN ANALYST will be regularly welcomed in every intelligent household in the land. Address,

ANALYST PUBLISHING CO.,
19 *Park Place, N. Y.*

MARINE TELEPHONY.—Telephonic communication can be carried on between ships at sea by means of a sound producing apparatus attached to each vessel, to be worked under the surface of the water. Each vessel also has a sound receiving apparatus to take signals. Intelligible signals could be produced by this apparatus which would be transmitted through the water in all directions with considerable velocity.

PALLADIUM IN WATCHES.—Palladium, a metal of the platinum group, but of far lower density than the latter, may be substituted for steel in the manufacture of watches. Palladium is absolutely non-polarixable, and it is unaffected to any noticeable extent by the presence of a magnetic field. Besides this, it has the incidental advantage of being rust proof. The discovery is due to C. A. Pallard, of Geneva, Switzerland, and watches are now being constructed with this metal.

AERIAL TELEGRAPHY.—According to Professor Gould's investigation, it appears that aerial telegraph wires on poles transmit electricity at the rate of from 14,000 to 16,000 miles per second, and that the velocity of transmission increases with the distance between the wires and the earth, or, in other words, with the height of suspension; and the subterranean wires, like submarine cables, transmit with reduced rapidity. Again, while wires suspended at a feeble height are known to transmit signals at a velocity of some 12,000 miles per second, those that are suspended higher give a velocity of from 16,000 to 24,000 miles. Wheatstone's claim of 288,000 miles in his experiments appears never to have been confirmed.

PROPERTIES OF ALLOYS.—Alloys, caused by melting two or three metals together, present some very interesting characteristics. One of the most curious is the fact that the melting point of the alloy is usually lower than that of any of its components. Wood's alloy, for instance, which consists of lead, tin, cadmium and bismuth, melts at above 150 deg. F., while the lowest melting point of any of the metals separately is that of tin, 446 deg. It has always been supposed that this alloy could only be composed at a comparatively high temperature, but Mr. William Hallock has recently shown that when the several metals are mixed together in filings and exposed for 24 hours to the heat of an ordinary water bath (212 deg.) the alloy is produced, and the mass becomes fluid, and that the previous fusion of each constituent is unnecessary.

THE OLDEST UNIVERSITY.—The University of Bologna, in Italy, will on June 12th celebrate its 800th anniversary. The grand festival will take place on that day and the succeeding one, but the festivities will continue for several days longer. This university is the oldest in the world, and it itself was the direct successor of a law school which had existed for 663 years, before other departments were added to it, and the whole raised to the grade of university. This was the law school established by the Emperor Theodosius II, A. D. 425. How many universities of to-day will be in existence 1,460 years hence?

SHADOW PICTURES.—A true art is claimed as a development of the familiar diversion of making rude figures by the shadow of the hands on the wall. Trewey, a French artist, has added great variety to these shadow pictures, and his fast increasing list already numbers more than 300 new forms. By patient exercise he has given his hands great suppleness, enabling him not only to represent the most diverse figures upon a screen, but to give them motion and life. The swan smoothing its plumage, the bird taking flight, the cat making its toilet, the tight rope dancer, who, after saluting the public, rubs chalk on her feet before walking on the rope, are among the silhouettes produced of such wonderful accuracy that one can scarcely believe they are shadows of the hands alone.

A LONG BRIDGE.—The bridge across the classic Oxus, on the line of the Russian Transcaspian Railway, is 1,000 feet longer than the Brooklyn Bridge. The entire road is a remarkable piece of engineering. It was considered impossible to maintain a railroad through the shifting sands of the Kara Kum Desert. But General Annenkoff, by covering part of his railroad with clay, by placing in his embankment layers of the branches of a desert shrub, and by cultivating along parts of the route many thousands of the desert plants, the roots of which retain the sand, has thus far maintained his roadbed without deterioration. The problem of a water supply was solved by bringing water in pipes from mountains that skirt 200 miles of the route, also by canals from the Murghab, while artesian wells are the source of supply between Merp and the Oxus. In a region that is destitute of fuel, and where the cold is at times intense, petroleum has been utilized to drive the locomotive and to heat the sixty railroad stations along the way.

BUSINESS NOTES.

ACHIEVEMENTS OF A DERMATOLOGIST.

The word dermatology, whenever used, somehow or other suggests the name of Dr. John H. Woodbury, at least throughout this section of the country, where the achievements of this eminent specialist are known and appreciated. And this is but natural, for Dr. Woodbury has probably done more for afflicted humanity in painlessly removing birthmarks and kindred disfigurements than any other person. Not only has he made the skin a life study, but he has also discovered, after extensive scientific research, a means of successfully removing moles, scars, pimples, redness of the nose, blackheads, red veins, white deposits, moth, freckles, etc., without leaving any trace of their having existed.

VIBURNUM COMPOUND.

A narcotic is only a temporary relief, not a curative agent—Viburnum Compound acts directly and specifically as a remedy. All narcotics and sedatives are followed by a reaction which often is more injurious than the original disease. Viburnum Compound has no unpleasant nor any unfavorable reaction.

PROSPERITY.

It is not many months since when the old New York firm of John Duncan's Sons felt compelled to give up their uptown store, which was doing a large and profitable business, in order that they might be able to devote more time to their wholesale business, especially the agency for Lea & Perrin's sauce. While every one is complaining of dull business we are glad to hear that the sales of this old favorite sauce have largely increased over those of any previous year. Genuine articles which have become public favorites always sell well.

Horsford's
ACID PHOSPHATE.

A preparation of the phosphates of lime, potash, magnesia and iron, and phosphoric acid, in solution, that is readily assimilated.

Especially recommended in all cases where the use of phosphoric acid or the phosphates is indicated, such as exhaustion of the physical, nervous and cerebral systems, gastric and liver derangement, gravel, and other calcareous deposits, cholera, scurvy, consumption, etc.

As a menstrum for the administration of strychnina, morphina, quinina, and other organic bases which are usually exhibited in acid combination, it is unsurpassed.

It makes a delicious drink with water and sugar only, and harmonizes with such stimulants as are necessary to prescribe.

Dr. G. F. WILBER, Nashua, N. H., says: "It is a very elegant method of using phosphorus."
Dr. T. C. SMITH, Charlotte, N. C., says: "I attach the highest importance to it as a therapeutic agent, of well-defined and specific value."
Dr. C. EARLE, Pontiac, Mich., says: "I do not hesitate to recommend it to the confidence of the profession."
Dr. T. B. PORTER, Freeport, Ill., says: "It is an excellent therapeutic agent."
Dr. I. W. MARTIN, Des Moines, Ia., says: "I take pleasure in adding my testimony as to its therapeutic value."
Dr. E. BROWN, Omaha, Neb., says: "I find it a very useful remedy."

Send for descriptive circular. Physicians who wish to test it will be furnished a bottle o application, without expense, except express charges. Prepared under the direction of Prof. E. N. HORSFORD, by the

Beware of Substitutes and Imitations.

RUMFORD CHEMICAL WORKS, PROVIDENCE, R. I.

LEA & PERRINS' SAUCE.

Lea & Perrins', the original and genuine Worcestershire Sauce, has been before the public over a half a century. Like all popular favorites it has long been the standard of comparison and the pattern for counterfeiters who not being able to imitate its excellence offer to the public imitations in bottling, labels and style of putting up. They dare not counterfeit the signature of Lea & Perrins which is on the red label of every genuine bottle, and of which this is a facsimile.

Lea & Perrins

To be sure of obtaining the genuine article, see that the above signature is on the label.

ANALYZE "MONON" Resolutions!?

Whereas, The Monon Route wishes to make known to the world that it has the finest system of Pullman Buffet Sleepers and Chair Cars, running between Chicago and Louisville, or Chicago, Indianapolis and Cincinnati;

And Whereas, This makes it in fact the double connecting link of Pullman travel between the winter cities of Florida and the northern summer cities; then

BE IT RESOLVED, That, before starting on a trip, be sure and address E. O. McCormick, Gen'l Pass. Agent, 185 Dearborn Street., Chicago, for rates, etc.

UTILIZING A TOY.—The latest illustration of the fact now generally accepted even by secular editors and preachers—viz.: that every discovery in the domain of pure science of to-day becomes to-morrow the basis of a corresponding advance in the arts and economies of life—is found in the use to which Crooke's radiometer has been put. This instrument, the discovery of which so nearly unbalanced the mind of its inventor, has been for several years a mere scientific toy, used only to illustrate a principle in physics or to stand in the show windows of the opticians' shops and attract passers-by by its mysterious movements. Reflecting that the rapidity of the revolution of its vanes is dependent upon the amount of light which falls upon them, a French photographer has utilized the instrument as a guide to the proper exposure of photographic plates. The number of revolutions of the vane which correspond to the actinic index of a plate being once established, the instrument thereafter is taken as an infallible exposure meter. —*National Druggist.*

JELLY THAT IS NOT JELLY.

"The manufacture of raspberry jam has been increasing of late," said a leading dealer to reporter. "There are now eight firms engaged in its production, and they make an aggregate of nearly 500 tons per year, which sells for $180,000. The manufacture of jelly is a less prominent industry here, though several parties make more or less of that article for bakers' use. Few New York concerns have had the temerity to attempt to compete with Baltimore manufacturers of cheap "jellies," such as are being wholesaled all over the country at the present time of 70 cents a dozen, or less than 6 cents each. As the glasses which contain these jellies can hardly cost less than 2 cents apiece, and as the labels, covers, etc., are not made for nothing, the price received for the jelly itself is evidently not much above 3 cents per glass. Although the demand for the jelly has become large of late, it is pretty well understood that it is principally an animal instead of a vegetable product, being composed mostly of gelatine, variously colored and flavored.

"The jelly that is manufactured in New York is nearly all made of apples, and sells at about 14 cents per pound. Apple now forms the base of an endless number of jellies, such as currant, raspberry, peach, pineapple, etc., which are made by simply adding extracts to flavor the apple jelly, and so perfect is the imposition that the great majority of consumers are deceived by it, or, in other words, cannot tell it from the jelly made from the fruit with which this is only flavored. It comes much cheaper than the real article. Real currant jelly, for instance, costs something about 28 cents per pound. The latter is made to some extent, and is sold by grocers who cater to the highest class of family and hotel trade."

The very fact that such stuff as has been described is sold at the price should be a sufficient warning to the consumer to buy goods which bear well known manufacturers' labels. They are reliable, clean, pure and healthy, and as cheap as goods fit to eat can be made. For instance, goods having Gordon & Dilworth's brand can be safely placed among the best and most reliable in the market.

SCIENTIFIC LACTATION.—A new invention of great value in the nursery, is a feeding bottle fitted with a thermometer embedded in the glass.

MALTED MILK

THE ONLY FOOD

For Infants and Invalids

THAT CONTAINS ALL THE ELEMENTS OF NUTRITION, WITHOUT A SINGLE ADDITION.

MALTED MILK does not have to be cooked.

MALTED MILK needs no addition of milk, only to be stirred up with water, which can be done without the slightest fuss or trouble.

MALTED MILK will not spoil in hot weather.

MALTED MILK is always ready for immediate use, night or day, when traveling or at home.

MALTED MILK does away with the danger of using sour or impure milk.

MALTED MILK is free from starch and cane sugar. All foods that have to be cooked contain starch.

Ask your physician his opinion of **MALTED MILK**; he knows all about it.

Price, . . . 50 Cts. | Large Size, . $1.00

Extra Large Glass Jars for hospital and family use, ... $3.75

These contain five times the quantity of the $1.00 bottles.

A sample bottle will be sent free to any Mother or Invalid sending their address to

MALTED MILK CO.

RACINE, WISCONSIN, U. S. A.

ON THE USE OF PURGATIVES.

BY CHARLES A. HOFF, M. D., ST. LOUIS, MO.

Of all preparations contained within the *pharmacopœia*, there are none, apparently, held in higher esteem by mankind than that class of medicines, commonly known as purgatives. The busy practitioner confidently prescribes them with variable frequency, singly and combined, from the date of the writing of his very first prescription to that of his last; and the corner druggist rarely sees a day pass over his head on which he does not greet the customer who has called around to get "something to act upon his bowels." Indeed, the inevitable purgative awaits the tiny baby screaming in its first attack of colic; it is resorted to by the invalid weighted down with years of suffering and disease; and it is by no means despised by the individual in robust health, when assailed by the various petty ills, which even the most vigorous seldom entirely escape.

Notwithstanding the fact that purgatives are so generally prescribed by the physician, and so frequently resorted to without advice by the patient, they are not altogether incapable of doing harm. As everybody knows, the habit of purging the system repeatedly with salines, cholagogues, hydragogues, or drastics, is a most pernicious one; and the physician who fails to exercise a proper care, both in the selection and the administration of cathartics will sooner or later bankrupt the health of his patients as well as his own hard earned reputation.

Constipation is a complication of so many disorders, a symptom of so many diseases that its treatment in different cases depends upon very different considerations. For a simple, ordinary attack, the average doctor has been accustomed to use a simple purge, such as castor oil, sulphate of magnesia, rhubarb, senna, aloes, colocynth, blue pills, etc.; yet in none of these, can it be truly said, has there been found all that could be wished for, even in so simple a matter as a laxative. Where can we find the physician who has not been vexed and annoyed at the complaints of his patients against the purgative medicines he has been accustomed to prescribe. Some people there are who can not or will not swallow pills; many object to the nauseating castor oil; not a few oppose the use of salines since they are disagreeable both in taste and effect; many look upon all resinous cathartics as objectionable on account of their so called heating properties; aloes is objected to in pills and especially in pregnancy; elaterium is said to be excessively harsh and severe, croton oil is known to be dangerous; podophyllin causes an undue amount of griping; blue mass is avoided on general principles; and so on to the end of the chapter.

Fortunately, however, the physician of the present need no longer be placed in a dilemma when called upon to prescribe a preparation free from the faults enumerated in connection with ordinary purgatives. The pharmacist has bravely come to his aid with a formula of incomparable excellence; and this preparation, a combination of "manna, purified cathartic acid and fruit juice," although but recently brought to the notice of the medical world, is, nevertheless, already regarded as a most valuable addition to the resources of medicine.

The happy thought that suggested the combination known as the Rio Chemical Co.'s Acid Mannate justly challenges unlimited admiration and esteem, and has thus far evoked from the profession an almost universal verdict of commendation and praise. Prompt, mild and certain in its action, Acid Mannate may well be considered an ideal remedy in the constipation of pregnancy. Being pleasant to the taste, and continuing its good work without increased dosage, it is pre-eminently adapted to cases of habitual constipation. Indeed, in its wide range of adaptability as an aperient medicine it is impossible to exaggerate its importance, or allude either directly or indirectly to the vast variety of its beneficial, therapeutical properties.

The importance of laxatives is probably nowhere appreciated so much as in the constipation of pregnancy; and it is to this fact, no doubt, more than to any other, that Acid Mannate owes its great popularity and fame among remedial agents. The testimony of thousands of honorable medical gentlemen leading us to believe that, through the beneficent effect of this same elegant formula, constipation need not hereafter, as in the past, be regarded as one of the most troublesome attendants upon gestation. Moreover, the atrocious female pill of unknown composition but of dire effect, which has deluged the drug market for ages, we may consider as having had its day; and it is to be hoped that, since the physician is now in possession of a purgative especially suited to the period of gestation, female life will be less frequently harassed by the ails and aches said to be peculiar to the sex; and that miscarriages, displacements, granular erosions, congestions, headaches, dyspeptic and hypochondriacal attacks, and the whole long train of aches, pains and nervous ills will grow less familiar to the medical profession in the same ratio that the physician increases his familiarity with the actions of Acid Mannate.

A full sized bottle of Acid Mannate will be sent free to any Physician who desires to test it, if he will pay the express charges and mention this Journal, on application to the

RIO CHEMICAL CO.,
St. Louis, Mo.

THE FINEST MADE
COLBURN'S
PHILADELPHIA
MUSTARD
KING OF CONDIMENTS

"ROYAL" SALAD DRESSING,
PURE AND WHOLESOME.
Always Fresh, does not turn Oily or Rancid.
"ROYAL" WORCESTERSHIRE SAUCE,
The Peer of American Manufacture.

PURITY. TRADE MARK EXCELLENCE.

"CROWN" CELERY SPICES, TOMATO CATSUPS.
Pure Flavoring Extracts, Etc.
HORTON, CATO & CO.,
SOLE PROPRIETORS & MANUFACTURERS,
DETROIT, MICH.

"BILLET"
are
Carefully Selected
French Sardines,
Packed in Choicest Olive Oil.
AT ALL LEADING GROCERS.

Any Retail Druggist in the United States who desires to obtain Advertising Matter, Show Cards, Signs, etc., which will assist and instruct him in the sale of Harriet Hubbard Ayer's Recamier Toilet Preparations and Vita Nuova, should address THE RECAMIER MFG. CO., 52 and 54 Park Place, New York City.

Subscriptions $1 per year. Now is the time to subscribe.

UNEQUALLED Ask your Grocer for, and insist on having, LEA & PERRINS' Sauce, "The Worcestershire." It is known throughout the whole civilized world as the Best and most Delicious Sauce. DELICIOUS.
SCOTCH MARMALADE, Jams, Fruit and Wine, Jellies, &c.
By James Keiller & Son, Dundee.
SCOTCH BISCUITS, Albert, Water, and Oat Cake,
By Robert Middlemass & Son, Edinburgh.
RACAHOUT des Arabes, by De Langrenier, Paris.
BAY WATER, West India, (J. D. S. brand), in cases, one dozen bottles.
Sold by all first-class Grocers.
JOHN DUNCANS' SONS, 43 Park Place, New York. Agents for the United States.

WE solicit an investigation of our system and methods, and will gladly send to any one very interesting matter on the OPIUM HABIT, DRUNKENNESS and their effects and cure. Physicians specially invited to examine, and if desirous of trying our remedies, liberal arrangements will be made with them. Prompt and frank attention to correspondence. The remedies are put up safely in stout boxes and sent masked. Full directions sent.
THE LESLIE E. KEELEY CO., Dwight, Illinois.

ALTHENE SKIN SOAP
An absolutely pure and perfect soap for all purposes of the toilet, nursery, bath or sick-room. Has the approval of leading chemists and physicians, and is recommended by all who have used it. Price 25 cts. a cake, or 65 cts. for a box of three. Can be obtained of the retail druggists or from
J. W. CAMPION & CO., 916 Filbert Street,
PHILADELPHIA.

GOLD You can live at home and make more money at work for us than at anything else in the world. Either sex; all ages. Costly outfit FREE. Terms FREE. Address, TRUE & CO., Augusta, Maine.



These Goods are "Par Excellence,"
Pure, Healthful and Reliable, warranted to give satisfaction in every particular.
For sale by wholesale and retail grocers throughout the United States. VOUWIE BROS., Manufacturers, CLEVELAND and CHICAGO.

Robert Gordon's
TRADE MARK.
SPICED SEA FOODS
(IN GLASS.)
OYSTERS, LITTLE NECK CLAMS, MUSSELL, SHRIMP, LOBSTER, Etc.,
Packed in 8 and 16 oz. Jars. Guaranteed to be strictly Pure.
MADE OF THE FINEST MATERIALS.
—ALSO,—
ROBERT GORDON'S CONDENSED CLAM CHOWDER,
In 3-lb Cans. Cheapest and Best in the Market.
MANUFACTURED BY
JONES, GORDON COMPANY, Limited,
204 West Street, New York.

"HUNTER'S INVISIBLE"
MEDICATED FACE POWDER.
An Exquisitely Delicate Preparation
For Beautifying the Complexion.
DELIGHTFULLY FRAGRANT. PERFECTLY HARMLESS.
Flesh, Pearl, Blonde and Brunette Tints.
The Closest Scrutiny Fails to Detect its Use!
25 CENTS EVERYWHERE. BEWARE OF IMITATIONS.

ESTERBROOK'S STEEL PENS
Leading Numbers 14,048,128 130, 135, 333, 161.


—For sale by all stationers.—
THE ESTERBROOK STEEL PEN CO., 26 John St., N. Y.
WORKS CAMDEN, N. J.

FAT CORPUS LEAN will reduce fat at the rate of 10 to 15lbs. per month without affecting the general health. 6c. in stamps for circulars covering testimonials. S. E. MARSH CO., 2315 Madison Sq., Philadelphia, Pa.
MADE ABSOLUTELY HARMLESS simply stopping the FAT-producing effects of food. The supply being stopped the natural working of the system draws on the fat and at once reduces weight. LEAN

Good Subscription Agents wanted by AMERICAN ANALYST.

J. HENRY HENTZ. J. P. ROBINETT. J. HENRY HENTZ, Jr.

ESTABLISHED 1793.

WHITE, HENTZ & CO.,

SOLE PROPRIETORS OF

Trimble and Pennsylvania Monogram Whiskies.

222 and 224 NORTH SECOND ST., PHILADELPHIA.

D. LIEBER, 17 South William St., New York. Col. H. A. SELIGSON, 1200 Pennsylvania Ave., Washington, D. C.

POLICE DEPARTMENT,

CITY OF NEW YORK.

MESSRS. ADAMS & SONS:

It gives me pleasure to add my testimonial, in behalf of your "TUTTI FRUTTI" CHEWING GUM, to your collection.

Superintendent Murray and myself were *recommended by Dr. CYRUS EDSON to try your Gum for a form of indigestion* from which we were suffering. At first it seemed to us a ridiculous remedy, but I am happy to say that its effects thoroughly justified the Doctor's recommendation.

I would add that I have rarely taken a more pleasant medicine.

Yours, very truly,

HENRY V. STEERS,

Inspector of Police.



A GOOD INCOME.

We have enabled several gentlemen and ladies to add largely to their incomes by paying them liberal commissions on subscriptions.

For further particulars, ADDRESS AMERICAN ANALYST,

19 Park Place, New York.

ESTABLISHED 1857.

J. H. CUTTER,

OLD

BOURBON AND RYE WHISKIES.

We are the Sole Owners and Proprietors of this Celebrated Brand of Whiskey.

C.P.MOORMAN & CO. LOUISVILLE, KY.

We Guarantee the Superior Quality and Absolute Purity of every Barrel of Whiskey sold by us under this Brand.

W. P. FESSENDEN, Agent for N. E. States, Maryland and Penn., 11 Central St., Boston.

A BUSINESS BENEFIT.

ADVANTAGES TO ADVERTISERS OFFERED BY THE AMERICAN ANALYST.

It has not the limitations of a daily paper. No one reads yesterday's paper. A monthly lives at least a month, while a semi-monthly is fresh twice a month, and its audience is not limited by geographical lines, but the circulation is all over the United States and Canada.

It contains matters of interest to everyone, especially the ladies of the household, and is, therefore, sure of a careful perusal. Our audiences are intelligent and of the better classes, who have money to spend, and any well worded advertisement in our columns, giving real information, will receive a careful perusal.

Our rates are as low as our circulation affords. Large circulation and original matter cost money, and those advertisers who desire to realize these benefits must expect to pay reasonably for them.

Advertisements in our columns are permanent. Most of our subscribers bind their numbers.

Our advertisements are set up in an attractive form, sure to call the attention of the reader.

Anything that our readers want, or for which a demand is to be created, not wholly of a local nature, will pay to advertise with us.

We take only advertisements from legitimate houses of really meritorious goods, and give them all the editorial assistance they deserve; consequently our readers knowing this, have confidence in advertisements contained in our columns.

The fact that we have the best and largest houses in every branch of trade advertising with us, and that they always renew as their seasons arrive, proves beyond a doubt that they have found the AMERICAN ANALYST a good advertising medium. Why should not you?

PEACOCK'S BROMIDES

(SYR: BROM: COMP: PEACOCK)

NERVE SEDATIVE.

Each fluid drachm represents 15 grains of the Combined C. P. Bromides of Potassium, Sodium, Calcium, Ammonium and Lithium.

USES:—EPILEPSY, and all CONGESTIVE, CONVULSIVE, and REFLEX NEUROSES.

This preparation has stood the test of time and experience, and can be relied upon to produce results, which can not be obtained from the use of commercial bromide substitutes.

DOSE:—One to two FLUID drachms, in WATER, three or more times a day.

PEACOCK CHEMICAL CO., St. Louis.

CARL L. JENSEN'S
CRYSTAL PEPSIN TABLETS



FOR DYSPEPSIA OR INDIGESTION.

CARL L. JENSEN'S CRYSTAL PEPSIN has been known throughout the world for the last ten years among the medical profession only. But a medical preparation of such high value as this could not be kept exclusively within the power of the physicians without permitting the public to become familiar with CARL L. JENSEN'S CRYSTAL PEPSIN, which they have so often seen mentioned in prescriptions from their physicians, and from which preparations they have received such gratifying results. That the public have availed themselves of this knowledge is manifested from the fact that the demand at the drug stores of late for CARL L. JENSEN'S CRYSTAL PEPSIN has become so urgent that we have been repeatedly requested by the Druggists at large to put up the PEPSIN in a more convenient form for their customers who demand JENSEN'S CRYSTAL PEPSIN without bringing a prescription. This PEPSIN, to suit the prescription department, is put up in loose Crystals or Scales, and therefore not in a suitable manner to be handled by the public. It is therefore, for the convenience of the public, prepared in tablet form, of which one or two constitute a dose, and put up in small bottles of convenient form to be carried in the pocket, each bottle containing seventy-five tablets.

CARL L. JENSEN,

SOLE MANUFACTURER,

2039 Green Street, Philadelphia, and 161 West 23d Street, New York.

KEPT BY ALL DRUGGISTS.

ESTABLISHED 1841.

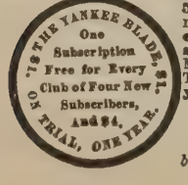


THE GREAT AMERICAN STORY PAPER,
—THE—
---YANKEE BLADE---



SUBSCRIBERS. FREE TO

This wonderful family story paper is read every week by 400,000 people. It is a large, eight-page paper, every page filled solid full of interesting reading; stories of thrilling interest, adventure, love, the sea, detective tales, fireside stories, etc. Special articles on the Household Department, Ladies' Work, Boys' and Girls' Departments. The Famous Funny Columns of THE YANKEE BLADE are edited by SAM WALTER FOSS, the celebrated humorist. The circulation is rapidly increasing. Endorsed by the best people as suitable for everybody to read. Its reading matter is pure, and devoid of the slightest tinge of vulgarity. Don't fail to try THE YANKEE BLADE. You will be delighted with it. Comes every week. Our regular subscription price is $2.00 per year. **We offer it to new subscribers for only $1.00 a year, or 50 cents for six months.** We will send it three months for 25 cents. **If you will enclose 6 cts. extra, and mention this paper, we will send you FREE a Half Dozen Japanese Shifu Handkerchiefs** of Mikado paper, fibre silk, nearly half a yard square, in handsome designs, assorted. This is one of the greatest offers ever made by any reliable firm. Send at once. **Sent 2 years for $1.75.** THE YANKEE BLADE is for sale at all newsdealers, for 5c. per copy.



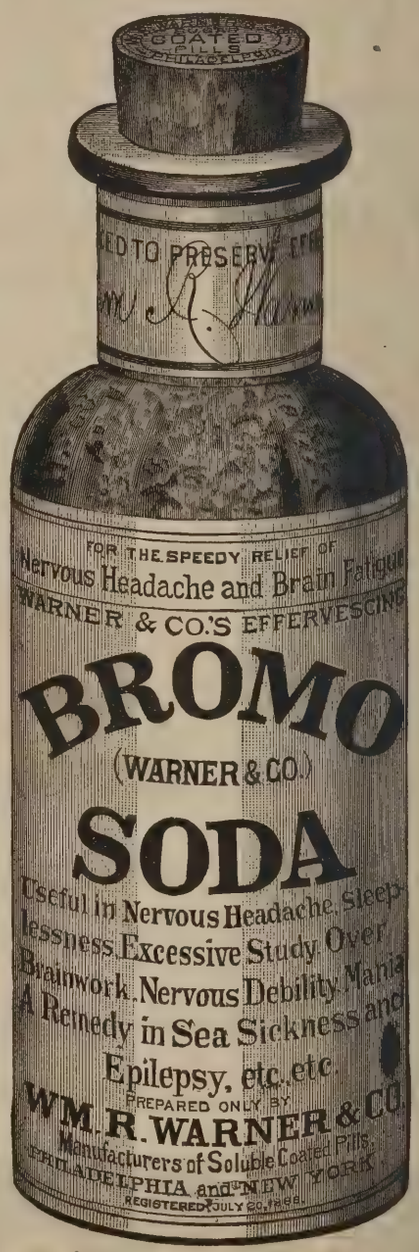
POTTER & POTTER, Pubs. Yankee Blade, Boston, Mass.

We have examined the above-named paper and Japanese handkerchiefs, and find them to be a remarkable bargain. We can recommend them to all our readers.—Editor.

A DOSE OR TWO

WILL QUICKLY CURE

NERVOUS HEADACHE.



A Cure for Sick Headache.

A CURE FOR

SLEEPLESSNESS.

A CURE FOR

SEA-SICKNESS.

OUR SPECIALTIES ARE

Choice Bottled Ciders

—AND—

Pure Cider Vinegar,

For Hotel and First-Class Trade.

T. P. ROGERS & SON,

370 to 376 Washington Street,

NEW YORK.

Good Agents

To obtain Subscriptions for

AMERICAN * ANALYST

WANTED ON LIBERAL TERMS.

Natural Lithia Water.

FARMVILLE LITHIA WATER

FROM VIRGINIA.

—Not only Relieves, but—

CURES

Bright's Disease, Kidney Troubles of all Kinds, Rheumatism, Rheumatic Gout, Dyspepsia, Bladder Troubles, Diabetes, Calculi, Albuminuria. Without Taste or Odor. An Unapproachable Record in Results.

Sold by HAZARD, HAZARD & Co., Fifth Avenue Hotel, and other first-class Pharmacists. Pamphlet free upon application.

FARMVILLE LITHIA SPRINGS CO.,

Broadway, New York, and Philadelphia.

Subscriptions $1 per year. Now is the time to subscribe.

CALIFORNIA

Fine Table Wines

From our Celebrated Orleans Vineyard.

Producers of the

ECLIPSE

CHAMPAGNE,

530 Washington St.

SAN FRANCISCO.

Agents.

PARK & TILFORD, New York,
C. JEVNE & CO., - - Chicago,



FACIAL BLEMISHES.

the Largest Establishment in the World for their Treatment. Facial Development, Hair and Scalp, Superfluous Hair, Birth Marks, Moles, Warts, Moth, Freckles, Wrinkles, Red Nose, Acne, Pimples, Bl'k Heads, Scars, Pitting, etc., and their treatment. Send 10c. for book of 50 pages, 4th edition.

Dr. JOHN H. WOODBURY,
87 North Pearl St., Albany, N. Y.
Established 1870. Inventor of Facial Appliances, Springs, etc. Six Parlors.

PURITY AGE STRENGTH

TRADE MARK.

The "Best" Tonic

A CONCENTRATED LIQUID EXTRACT OF

MALT AND HOPS.

Aids Digestion. Cures Dyspepsia.

Strengthens the System.

Restores Sound, Refreshing Sleep.

Priceless to Nursing Mothers.

Manufactured by SPECIALTY DEPARTMENT,

PHIL. BEST BREWING CO.

Eastern Depot, 28 College Place, New York.

Recommended by Eminent Physicians.

FOR SALE BY ALL DRUGGISTS.

NATRONA BI-CARBONATE OF SODA.

(ABSOLUTELY PURE.)

NATRONA



TRADE MARK

SODA

The nature of the raw material from which NATRONA BI-CARBONATE OF SODA is made—viz., kryolith, a mineral containing *pure sodium*—insures a purity and uniformity of product which cannot be obtained from any other known material. In making BI-CARB. SODA from any other raw material, the use of sulphuric acid is a necessity, but none is used in any part of the process of making NATRONA BI-CARB.; hence its entire freedom from the slightest trace of arsenic, which is always present in ordinary soda. Its absolute purity and entire freedom from all traces of *sulphate of soda*, common salt and other impurities, render NATRONA BI-CARB. NEARLY TASTELESS, and being bolted through the finest bolting-cloth, insures the finest stage of division.

To these indisputable facts the attention of CONSUMERS of soda is specially called. They are IMPORTANT, and should influence both those who use and those who sell soda, to buy and sell NONE BUT THE BEST.

The NATRONA BI-CARB. Soda is kept in stock by almost every wholesale druggist and grocer throughout the United States, of whom it may be ordered.

Natrona Bi-Carb. Soda is unequaled by any other brand of English or American Manufacture.

PENNA. SALT MANUFACTURING CO.,

NATRONA CHEMICAL WORKS. PHILADELPHIA, PA.

ARMOUR & CO.

CHICAGO, ILLS.

PACKERS OF

Pork and Beef Products

CANNED MEATS,

ETC.,

FOR HOME CONSUMPTION AND FOR EXPORT

TO ALL PARTS OF THE WORLD.

Also,

SHIPPERS OF

Choice Dressed Beef,

MUTTON AND HOGS,

In Refrigerator Cars,

To BOSTON,

NEW YORK,

PHILADELPHIA,

BALTIMORE,

And other cities throughout the country.

CARNRICK'S SOLUBLE FOOD

FOR INFANTS AND CHILDREN.

For Mothers, Invalids, Dyspeptics & Aged People.



THE ONLY FOOD *that digests as easily as human milk, and agrees with all infants and children.*

THE ONLY FOOD *that thoroughly nourishes the child without the addition of cow's milk.*

THE ONLY FOOD *that removes from infancy all necessity, danger and annoyance of a wet nurse.*

TAKEN BY MOTHERS *once or twice a day the quantity of milk will be increased and quality at once improved.*

IF THE CHILD IS RESTLESS, *change partially from nursing to* **SOLUBLE FOOD.**

DR. STUTZER, Food Analyst for Rhenish Prussia, says: "CARNRICK'S SOLUBLE FOOD is the best of all the foods I have ever examined."

"OUR BABY'S FIRST AND SECOND YEARS," by Marion Harland. Book of 64 pages, giving careful instructions for bringing up the little ones. Sent free by

REED & CARNRICK, N. Y.



GOLD MEDAL, PARIS, 1878

BAKER'S

Breakfast Cocoa.

Warranted *absolutely pure Cocoa,* from which the excess of Oil has been removed. It has *three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup.* It is delicious, nourishing, strengthening, easily digested, and admirably adapted for invalids as well as for persons in health.

Sold by Grocers everywhere.

W. BAKER & CO., Dorchester, Mass.



BLAIR'S PILLS

Great English Remedy for Gout, Rheumatism and Kidney Complaints.

Sure, Prompt and Effective. Oval box 34, round box 14 pills.

At all druggists, and 224 William St., New York

Sura Cura

ROBINSON'S SURE CURE FOR

RHEUMATISM

And NEURALGIA,

And remedy for diseases arising from an impure state of the blood. An antidote for **MALARIA.** Price 50 c. and $1. Sent by mail on receipt of price. Send for Circular.

R. W. ROBINSON & SON,
184 Greenwich Street,
NEW YORK.

Sura Cura

GILBERT S. GRAVES

STANDARD STARCH.

MANUFACTURED WITH ENTIRELY NEW MACHINERY AND BY LATEST IMPROVED PROCESS.

IT IS GUARANTEED to be fully equal to BRANDS SOLD AT FANCY PRICES, and MUCH SUPERIOR TO STARCH SOLD AT EQUAL PRICES.

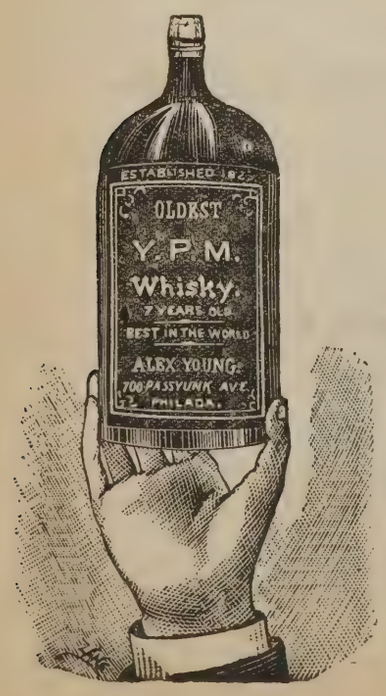
THE MIRROR GLOSS

Is the finest Starch made for the Laundry, and cannot be excelled. It will not injure the finest Laces.

THE CORN STARCH

For culinary purposes is prepared with the greatest care, from selected Corn, and is a most delicious and wholesome article of food.

ASK YOUR GROCER FOR IT.



ESTABLISHED 1823.

ALEX. YOUNG CO., Limited

DISTILLERS OF

Y. P. M. WHISKIES

DISTILLERY,

Nos. 408, 410, 412 and 414 South Street

MALT HOUSE,

416, 418, 420, 422 and 424 South Street,

STORE,

No. 700 Passyunk Avenue.

PHILADELPHIA, PA.

SWIFT'S

Choice Chicago Dressed Beef

—AND—

MUTTON.

CAN be found at all times in full supply and at popular prices at the branch houses in all the larger cities and is ***retailed by all first class butchers.***

The trade of all marketmen and meat dealers is solicited for our Wholesale Branch Houses, and the ***public may rest assured*** *that in* ***purchasing our meat*** *from dealers they will* ***always receive the best.***

SWIFT AND COMPANY,

UNION STOCK YARDS,

CHICAGO, ILLS.

Tabasco Pepper Sauce

OR LIQUID PEPPER.

Is simply the Pulp of the Ripe Pepper Extracted by Pressure.

The seed of this Pepper was obtained from Central America, and by careful cultivation in Louisiana for many years has been so improved in strength, flavor and aroma, as to have become a new variety of Red Pepper, superior to all others. The pulp is so handled as to retain all the flavor, strength, aroma and color of the ripe fruit, and to keep unimpaired in any climate. It excites the appetite, promotes digestion, and is pronounced, by connoisseurs, to be the fine t condiment in the world. For medicinal purposes it recommends itself by its purity, strength and diffusible form.

Manufactured by E. McILHENNY,

NEW IBERIA, LA.

For Sale by all Wholesale Grocers.

CARNRICK'S SOLUBLE FOOD

IS UNLIKE ANY OTHER INFANT'S FOOD THAT HAS EVER BEEN PRODUCED.

℞

THE FORMULA.

Partially Predigested Milk Solids,	**45 parts.**
Wheat with the Starch converted into Dextrin,	**45 "**
Milk Sugar,	**10 "**

We do not claim this food to be "a **perfect** substitute for human milk." But we do claim that **Carnrick's Food approaches nearer to human milk in constituents and digestibility than any other food that has ever been produced**, and that it is the only infant's food that will, without the addition of cow's milk, thoroughly nurse a child from its birth.

We believe that **Carnrick's Food** solves the problem of a reliable substitute for human milk. The Casein of cows' milk, by partial predigestion with freshly made Pancreatine, is rendered as easily digestible by the infant as human milk.

We have never published an analysis of **Carnrick's Food** "prepared with milk," for, unlike all other foods, it is prepared by the addition of water only, and we base our claim upon the intrinsic value of the food as compared with an equal amount of solid constituents of human milk. All other analyses or comparisons are misleading. We challenge similar comparisons with any other food, and confidently believe, that if **Carnrick's Food** is depended upon for the nutrition of infants, the great mortality among children will be reduced. Full information regarding the process of manufacture will be cheerfully furnished, and samples sent free to those who wish to test **Carnrick's Food.**

REED & CARNRICK, New York.

GORDON & DILWORTH

MANUFACTURING PURVEYORS

Established 1847

ALIMENTARY PRODUCTS

ALL OF OUR PRODUCTIONS BEAR THIS TRADE MARK

WE WILL PROSECUTE ALL INFRINGEMENTS & IMITATIONS







CHOICE DESSERTS

OVER 100 DOMESTIC & FOREIGN FRUITS AND VEGETABLES TRANSMUTED INTO TABLE DELICACIES

PRICES ON PRESERVED FRUITS REDUCED 1ST DEC. 1885

PRESERVED, CANNED & BRANDY-FRUITS, FRUIT-JELLIES, VEGETABLES, TOMATO-CATSUP, SYRUPS & JAMS, SALAD-DRESSING, BLACKBERRY BRANDY, MINCE-MEAT, PLUM PUDDING, SWEET PICKLES, OLIVES & CAPERS, WINE-JELLIES, MARMALADE, SOUPS, SAUCES &c.

SOLD BY THE LEADING GROCERS ON THE AMERICAN CONTINENT.

GRAND NATIONAL PRIZE OF 16,600 FRANCS.

QUINA-LAROCHE

VINOUS ELIXIR,

A STIMULATING RESTORATIVE AND ANTI-FEBRILE TONIC.

This meritorious ELIXIR, QUINA-LAROCHE, is prepared from the **three** Cinchonas; it is an agreeable and doubtless highly efficacious remedy.—*The Lancet.*

QUINA-LAROCHE, under the form of a vinous Elixir, contains the totality of the numerous principles of the **three** Cinchona barks. It is a preparation which renders great services to Therapeutics.—Extract of the *Gazette des Hôpitaux*, Paris.

Far superior to all Ordinary Cinchona Wines.

LAROCHE'S QUINA, tried by the Academy of Medicine of Paris, is a specially prepared Compound Extract of Quinquina, a careful analysis, confirmed by experience, has shown that most of the wines and syrups hitherto used have not contained all the properties of this precious bark, of these some, although beneficial, are altogether lost, while many preparations contain but half the properties of the bark in varying proportions.

Mr. Laroche, by his peculiar method, has succeeded in extracting all the active principles of the quinquina, combining these with *Catalan Wine*, forming an Elixir free from the disagreeable bitterness of other similar preparations. Practitioners have found triple advantages in the use of this Elixir; it is a *strong tonic*, is easily administered, and perfectly harmless, being free from the unpleasant effects of Quinine.

THE FERRUGINOUS QUINA-LAROCHE is the invigorating tonic *par excellence*, having the advantage of being easily assimilated by the gastric juice, without, in any way, deranging the action of the digestive organs, proving itself to be a most efficacious remedy in cases of impoverishment of the blood, **Anæmia, Chlorosis, Intestinal Hemorrhage, Castralgia, Exhaustion,** etc., etc.

PARIS.—22 RUE DROUOT.—PARIS.

L. Laroche

E. FOUGERA & CO., New York, Sole Agents for the United States.

D. G. Cook, Pres.

AMERICAN WINE CO.,

ST. LOUIS.

COOK'S IMPERIAL



Press House and Wine Cellars, SANDUSKY, OHIO.

Office and Salesroom, Wine House and Vaults, 3015 TO 3021 CASS AVE.

Pure Still Wines.

GREENWAY'S PORTER

—AND—

DOUBLE AND EXTRA DOUBLE STOUT.

GREENWAY'S ALE

INDIA PALE

IN GLASS OR WOOD

ENGLISH TRADE MARK.

FULLY EQUAL TO THE BEST IMPORTED. FOR FAMILY OR CLUB USE. RECOMMENDED BY OUR BEST PHYSICIANS FOR SALE BY ALL FIRST CLASS GROCERS AND DEALERS.

SEND FOR CIRCULARS.

THE GREENWAY BREWING CO.

SYRACUSE, N.Y.

Greenway Bottling Co.,

BOTTLERS OF

GREENWAY BREWING CO'S BRANDS OF ALE, PORTER, DOUBLE STOUT

—AND—

Germania Brewing Co's Standard Pale Crown Lager & Culmbacher.

N. Y. Depot, 31 Broadway.

Established in London, 1831.

DEAN'S PATENT

ARDENTER MUSTARD.

BEST IN THE WORLD.

WARRANTED ABSOLUTELY PURE.

PATENT OFFICE UNITED STATES OF AMERICA 1871

WARRANTED ABSOLUTELY PURE.

Ardenter Mustard Pellets

—FOR—

Dyspepsia and Indigestion.

UNIVERSALLY recommended and prescribed by physicians. The medicinal property are English mustard seed coated with pepsin and sugar. You will find it will relieve you after using two or three doses. It is very beneficial for Heartburn, Sour Stomach and Headache. They are a beautiful confection for children. Each bottle contains full directions.

W. G. DEAN & SON,

361 and 363 Washington Street, 84, 86 and 88 North Moore Street, New York.

—THE—

CHRISTIAN MOERLEIN

Brewing Co.,

CINCINNATI, U. S. A.,

Brewers of the far-famed

"NATIONAL" EXPORT

(The Queen of Beers.)

LAGER.

Owing to its absolute purity, beautiful pale color, fine aroma and nutritious qualities, the above beer has become the PRIME FAVORITE in all the principal hotels and clubs, and in thousands of families throughout the West and South.

Pure LAGER BEER,

"IMPERIAL" and "CULMBACHER"

Brewed & Bottled SPECIALLY FOR HOTELS, CLUBS AND PRIVATE FAMILIES

BY

Beadleston & Woerz

291 W. 10th St. New York.

Orders by Postal Card promptly attended to.

H. CLAUSEN & SON

BREWING CO'S

CHAMPAGNE LAGER BEER,

ROYAL EXPORT LAGER,

EAST INDIA PALE ALE,

EXTRA AMERICAN STOUT.

Bottled for Family Use and Export by

PHŒNIX BOTTLING CO.

888 and 890 Second Avenue,

Bet. 47th and 48th Streets,

NEW YORK.

Order from your Grocer, or direct from us.

FULL WEIGHT
PURE
DR. PRICE'S
CREAM
BAKING
POWDER
MOST PERFECT MADE

Its superior excellence proven in millions of homes for more than a quarter of a century. It is used by the United States Government. Endorsed by the heads of the Great Universities as the Strongest, Purest, and most Healthful. Dr. Price's Cream Baking Powder does not contain Ammonia, Lime or Alum. Sold only in cans.
PRICE BAKING POWDER CO.
NEW YORK. CHICAGO, ST. LOUIS.

MANUFACTURED BY THE
ST. LOUIS STAMPING CO.
PATENT
GRANITE IRON WARE
SOLD EVERYWHERE

Corks
Francisco Lado & Co.
ESTABLISHED 1866
NEW YORK.

THE TORSION
Braided Wire Mattress.

At all times a thoroughly ventilated and perfectly clean mattress, it cannot absorb odors, or retain exhalations or disease germs.

D. HAYES AGNEW, M. D., Prof. of Surgery, University of Pennsylvania, says:
"The Torsion Braided Wire Pillow and Mattress I regard as superior to anything of the kind now in use; well suited for either private or hospital use.

Prof. WM. H. PANCOAST, late Professor of Anatomy, etc., in Jefferson Medical College, now Professor of Anatomy and Clinical Surgery in the Medico-Chirurgical College of Philadelphia Hospital Surgeons, says:
"I have used in my surgical practice your Braided Wire, in the form of mattresses, pillows for the head and body, and short pillows for the arm and leg when injured. I find them most admirable, cool and light, yet affording perfect and elastic support.
I have saved a patient from bed sores by the use of the Braided Wire mattress."

WM. H. FORD, President Board of Health, Philadelphia, says:
"I have used the Torsion Braided Wire Mattress with great satisfaction, it is light and therefore easily handled; it is elastic and very comfortable. The case can be easily removed to afford a complete airing, a feature of great importance from a health point of view.
It is an invention of great usefulness.

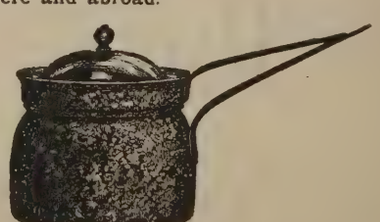
For descriptive circular and price list, send to
The Torsion Braided Wire Upholstering Company,
1017 CHESTNUT ST., PHILA.

N. K. FAIRBANK & CO'S
FAIRY SOAP.
A PERFECTLY PURE WHITE FLOATING SOAP.
DESIGNED EXPRESSLY TO USE IN TOILET, BATH AND NURSERY.
Admirably adapted to every requirement of the Household.
DAINTY AND DELICATE FOR ALL WASHING PURPOSES
For sale by all First-class Grocers and Druggists.
N. K. FAIRBANK & CO.,
CHICAGO, ST. LOUIS, NEW YORK, OMAHA.

RUBY ROYAL "SEC."
HENRI ABELÉ
RUBY ROYAL
REIMS
This wine, of a bright crimson or Ruby color, possesses exceptional merit in all the characteristics of dryness, mellowness of flavor, and delicacy of fragrance. It is the only red champagne in the market, and can be tried at the Hoffman House, Delmonico's and other first-class places.
Sold by the Leading Grocers.

CLEVELAND'S
SUPERIOR
Baking Powder
Is made only of the purest grape cream of tartar, purest bicarbonate of soda, and a small portion of flour, and is warranted entirely free from alum, ammonia, the phosphates, terra alba, lime, and all the adulterants frequently found in ordinary baking powders. It always affords the most nutritious, the most healthful, and the most delicious food, and the purity of materials used in its manufacture, and the nicety of their combination, render it the strongest and most economical ever produced.
It is recommended for purity, efficiency and healthfulness by various state chemists, chemists of boards of health, and professors in institutions of learning throughout the country.
Sold only in tin cans.
CLEVELAND BROTHERS,
ALBANY, N. Y.

ESTABLISHED 1872.
GELATINE.
JAMES CHALMER'S SON'S
Transparent Gelatine.
PURITY—STRENGTH.
Best for Family Use.
Jellies, Blanc Mange, Etc.
ACKNOWLEDGED BY EVERY ONE EQUAL TO THE BEST.

AGATE IRON WARE
Is the Purest, Cleanest, Most Durable, and altogether the Best Ware for family use ever made. It will not rust or break like ordinary Enamels, and is absolutely pure and safe to use, as certified to by the most eminent chemists here and abroad.

Two thousand different styles and sizes of Agate cooking utensils, for family use, are sold by all first-class dealers throughout the world, and giving universal satisfaction.

Subscriptions $1 per year. Now is the time to subscribe.

AMERICAN ANALYST

FOR THE

FAMILY AND CONSUMER.

A SEMI-MONTHLY ADVOCATE OF PURE FOOD AND THE SUPPRESSION OF ADULTERATION.

Office, 19 Park Place.

[Entered at the Post Office at New York, as Second Class Matter.]

VOL. IV.—NO. 12. NEW YORK, JUNE 15, 1888. Whole No. 84

CONTENTS.

A Simple Remedy 256
Adulteration in Europe 256
Answers to Correspondents 254
Baking Powders 252
Borrowing Under Difficulties 253
Business Notes 257
Crockery Poison 252
Domestic Dietetics 255
Editorial 254
The Late Thomas McElrath—A Correction—Oats and Morphine Again—Hard Porcelain vs. Pottery—A Vast Land Scheme.
Historic Gems 255
House Moths 253
Mind Cure 251
Moths, How to Destroy 253
Tom Middleton's Wife—Concluded 249
Water 256

TOM MIDDLETON'S WIFE.

THE STORY OF A PLUCKY CALIFORNIA WOMAN.

(*Concluded from p.* 226.)

With all the rest of her senses dulled, her hearing appeared to have become preternaturally sharp. She seemed to hear the clatter of the approaching train twelve miles away. The throb, throb, throb of the engine kept pace with her beating heart. She heard the hollow echoes from the neighboring hills as the train crept over embankments, its deafening clamor as it rushed across trestle-work, its dull rumble as it rolled over solid ground. She even seemed to see the engineer as he laid his hand on the escape-valve, ready to give the iron monster voice, as it neared the little mountain town; then the wild shriek at the escaping steam, the clangor of the bell, the puff, puff, as the train slackened speed, the clatter of brakes, the jangling of couplings.

Would she never reach the little red station-house, now plainly in sight at the end of the smooth, graveled road? She was passing the post-office, where people idly gazed at her. What matter! If only there were a horse and buggy in sight, to help her on her way! If only one of the loungers would understand and take up the mission which her spent strength seemed inadequate to fulfill! But she might not turn aside.

On the depot platform more loungers, Jim among them, rolling a quid of tobacco in his cheek and talking earnestly about the state of the weather and the prospects of the growing crops. They all looked upon her as a mad woman, as she ran past them. Jim muttered an expletive under his breath, moved by the strong indignation that must always possess a self-respecting servant, when master or mistress does something derogatory to the dignity of his "family."

The station-master was in his office, talking with a gentleman who had come down from the mountains, and was waiting to take the train to the city. He was clad in a very nobby hunting-suit, and was talking with some excitement.

"It has rained all the week," he was saying; "you think it rains here in the valley, but, great guns! you should be up in the mountains in a rain-storm. Sheets and sheets of it—blizzards of sleet and hail, and the wind blowing like a hurricane. We broke camp yesterday. I took a bee-line down here. The rest crossed the hills to the station above. They'll be down on the four o'clock."

Voice and speaker were familiar to the woman who stood in the doorway, both hands pressed to her panting breast. The words came only too distinctly to her quickened senses. Then her premonitions were true, and Tom—Tom was on that freighted train. Again her body reeled, but her steady brain saved her.

"Stop the train! The bridge is gone!" she cried.

Both men looked up, startled at the words. With the prompt movement of a man trained to obey orders, the agent leaped to his instrument; the other man, slower to comprehend, came forward, the look of amazement on his face, as he viewed the singular apparition in the doorway, giving place to amused indulgence, as he recognized the speaker. What an eccentric, impetuous girl Kate Mitchell always was, and what a life she must lead Tom Middleton!

"This is quite an unexpected pleasure. Mrs. Middleton," he said, smiling.

She waved him back with a single imperious gesture. There was a brief silence. The operator listened intently, with his head resting on his hand. Kate Middleton remained standing in the doorway, her hands clasped low, her face blanched with dread, and all her soul absorbed in listening. Jack Spencer slowly comprehending the meaning of the scene, waited, his interest growing with every moment's delay.

At last it came, the monotonous click, click, conveying its portentous message in a language unknown to two of the three listeners. The operator arose from his chair.

"Just in time. The train was pulling out of the station, but they stopped her."

Kate Middleton clutched at the doorway. For the first time in her life her head gave way. She was again on the swaying sycamore, and the limb was cracking, breaking, going down. She felt the water on her face and opened her eyes, to find herself seated in a chair, Jack Spencer supporting her head, and the station-agent pouring ice-cold water over her.

"She'll be all right in a minute," said Jack, cheerfully. "Now, Mrs. Middleton, with your permission, I'll see you home."

She borrowed a hat and cloak from the station-agent's wife. Jim brought up the horses. Jack Spencer handed her into the wagon, with grave courtesy, and they drove off. Some of the loungers, dimly understanding what she had done, looked on curiously. That was all. No fuss, no formal tributes, no speech-making even from the two who understood. There was no deputation of strong men to tender her public tribute, in voices shaken by sobs. Contrary to all tradition, and unlike any hero or heroine who ever saved a train from wreck, she was on the wrong side of the bridge, and the people most deeply concerned were nine miles away.

She had little to say on the ride homeward, although Jack Spencer was attentive and talkative, and tried, as hard as a man could, to show his appreciation of her brave deed. Perhaps she was embarrassed in the consciousness of her odd attire, and the curious looks cast upon her as she rode through the village. Perhaps she was secretly ashamed of her mad race, and of the exceptional, unwomanly physical prowess that had made it possible, notwithstanding the fact that it had saved many lives. She did not even invite Jack to come in when she reached her own door, but descended from the wagon with great dignity, and only relaxed a little when Jack said, very earnestly:

"I shall never underrate the value of physical training for woman again, Mrs. Middleton. Some day I shall beg to put my little daughter under your tutelage."

Which was a great concession for Jack, whose little daughter was the apple of his eye, and whom he had hitherto only looked forward to making an accomplished woman, of elegant manners.

Neither honor nor praise awaited Kate in her own home. Bridget scolded her, and put her to bed, and declared that she "wud surely catch her death a-cold, an' she desarved it well," and tried to save her from the consequences of her misdeeds at the same time. Of the children, Harry stubbornly resented her base desertion of them on the bank of the raging stream, and Marian, with her mother's spirit of adventure strong upon her, terrified the household by avowing her intention of going across the water on a tree the first time she could escape paternal authority.

Her mother had her reward, nevertheless. Late that night, when the children were asleep and Bridget had relaxed guard, Kate escaped from bed, and donning a wrapper and shawl, laid herself down upon the lounge before the open fire, to enjoy scanning the daily paper. The rain fell steadily without, so steadily that the sound of a horse's hoofs coming up the sodden driveway were scarcely distinguishable from the patter of the rain-drops. Kate started up as she heard a step outside the door; another moment and Tom was before her, looking very solemn, like a newly materialized ghost.

"Tom?" she cried, sharply, and then she seemed to cower before him; yet not before him, but the horror of the afternoon, which again descended upon her and took possession of her. Tom, her husband, might have been one of that grisly throng of mangled, crushed, dead and dying phantoms of the might-have-been, ever torturing her mental vision. She pressed her hands over her eyes, as if they might bar out the sight.

"Oh, you ought not; you should never do such a thing," she said.

After all, she had nerves, and they had been sorely tried that day.

"What do you mean?" gravely demanded Tom. This was indeed a sorry greeting, after all he had been through.

"You shouldn't come home in this unexpected way; you should let people know when you are coming."

"Kate," said Tom, solemnly, seating himself on the sofa and drawing her down beside him, "you will speak differently when you know how near I came to not coming home at all; I have traveled twelve miles on horseback over a rough mountain road to get here to-night. We were just starting out of Prescita when we were notified that the bridge three miles below there—six miles above here, Kate—had been carried away."

"How did you find out?" Kate was herself again. There was a little twinkle in her eye, but her lip trembled.

"As to that," replied Tom, "reports are somewhat vague. But all accounts agree it was a woman. And she did wonderful things. The bridge-tender's wife, I believe. Floated down stream on a timber, somebody said. Started, all dripping, for the station, and got there in an unconscionably short time. Not a minute to spare. If it hadn't been for her!—oh, it was a wonderful feat, everybody says."

"But how—very—unladylike!" said Kate, in a shocked voice, stooping to pick up something from the floor.

"Unladylike!" cried Tom, excitedly. "I tell you, Kate, that was something worth while. Very different from your lawn-tennis practice. When a woman puts her strength to such a use—and such a strain as it must have been, by jove! Why, Kate, I doubt if you could so much as walk to town and back. But when a woman saves two or three hundred lives at one stroke——! My goodness, Kate! What have you been doing with your foot?"

For Mrs. Middleton had unconsciously pushed the wounded foot into sight, and its load of bandages, piled up by Bridget's clumsy fingers, and finished with a red flannel swathing, was indeed calculated to strike terror to the beholder.

"I—I took a little walk to-day," replied Kate, guiltily, trying to hide the foot again beneath the hem of her dress. "But don't let us talk about that, Tom. I'm sorry I seemed queer and cold when you came in. I wasn't feeling well, and you—you looked so. It made me shiver."

Like many people who are dauntless in the presence of real danger, Kate had all her life been shy of praise. If she could have kept the knowledge of her escapade, as she mentally termed it, from her husband, she would gladly have done it. But stupid as he was in some ways, obtuse as he was, he was not to be put off in this way. He was already on his knees beside her, cutting threads, removing pins and undoing cloths, in spite of her protests, until he disclosed a little foot, purple with bruises, and with an ugly, gaping cut in one side.

"No wonder you are not yourself to-night. A 'little walk!' I should say so. Kate, what have you been up to now?"

"I had on my slippers," confessed the culprit, "and—there wasn't time to change them. Let it alone, Tom. It'll be all right to-morrow."

"A 'little walk'" persisted Tom. "Great Cæsar, Kate, you are not to be trusted alone any more than a two-year-old babe; I'll never dare to go off and leave you again."

"If I hadn't taken my little walk, you—you—you mightn't have had the chance!" cried poor Kate, cornered at last.

"My soul!" cried Tom, a light dawning upon him at last. "It was you!"

I think he kissed the little lame, bruised feet. I am afraid he did a great many foolish things and humbled himself most lamentably to show his love for his brave young wife, his pride in her, and his contrition.

There was a purse made up by the passengers on the overland train that fateful day, to reward the plucky woman who had saved them from such a frightful disaster, but they were never able to find her out. The station-master and Jack Spencer kept their secret well. The only subscription that ever reached its destination was Tom Middleton's. His wife sometimes wears a very ugly bracelet set with a couple of very large and ponderous gold coins. When people question her about it she replies that it is a medal Tom once awarded her for a race she won. It is generally understood that she refers to some rowing match or horseback ride, for there are boats on the pond now, saddle-horses in Tom's stable, and a tennis-court on the lawn. But even as she answers Kate sees again the railroad train, with its precious living freight, thundering on to destruction, and a woman, bare-headed, wild-eyed, with draggled dress and bleeding feet, racing desperately across a rough country, in a mad effort to avert the impending danger.—*Flora Haines Loughead, in the Argonaut.*

NATIVE OPIUM.—Florida promises to become a large producer of opium. Sixteen plants will produce an ounce, and an acre of poppies will yield $1,000 worth of opium.

GLASS HOUSES.—A writer in the St. Louis *Globe* is looking hopefully forward to the time when the walls, ceilings and floors of our dwellings will be of malleable glass as a period when approximate cleanliness will be possible.

MELLIN'S

TRADE MARK

FOR INFANTS & INVALIDS

FOOD

The Only Perfect Substitute for Mother's Milk.

A Copy of our Book,

The Care and Feeding of Infants

will be MAILED FREE to any address.

DOLIBER, GOODALE & CO.,

40-41-42-43 Central Wharf, Boston, Mass.

ASK YOUR GROCER FOR IT. USE NO OTHER.

IMPEROYAL Wheat, Buckwheat and Cereals.

M. D. STEVENS'

IMPEROYAL

WHEAT & BUCKWHEAT

FLOUR

REGISTERED TRADE MARK

BEST IN THE MARKET.

IMPEROYAL VACUUM COOKED OATS, WHEAT AND HOMINY

AND

Griddle Cake Flour.

M. D. STEVENS' IMPEROYAL NEW PROCESS REFINED FLOURS.

Require but one minute in preparation, without **Salt, Baking Powder or Yeast.**

18 MERCANTILE EXCHANGE,

NEW YORK.

DIRECTIONS ON EACH PACKAGE.

Can be used for all kinds of Pastry, Bread, Biscuit, Griddle Cakes, etc., and its absolute freedom from Alum, Terra Alba, or any injurious ingredient, make it a necessity in every household. No lady can afford to be without it.

SOLD BY FIRST-CLASS GROCERS.

NESTLÉ'S FOOD

NESTLÉ'S

TRADE MARK

MILK FOOD.

IS ESPECIALLY SUITABLE FOR INFANTS IN HOT WEATHER.

Requires No Milk in Its Preparation and is Very Effective in the Prevention of Cholera-Infantum.

"Ziemssen's Cyclopedia of the practice of Medicine," Vol. VII., the standard authority, says: **"In cases of Cholera-Infantum Nestle's Milk Food is alone to be recommended."** Because the gastro-intestinal disorders to which infants are so subject are provided for by presenting only the *nourishing* properties of cow's milk in a digestible form. "Cow's milk produces a coagulated mass of curd or cheese, which the immature gastric juice is **utterly unable to dispose of.**"

This is one of several reasons why infant foods requiring the addition of cow's milk fail as a diet in hot weather.

Pamphlet by Prof. Lebert and sample sent on application.

THOS. LEEMING & CO., Sole Agents, New York.

COMFORT vs. CUSTOM.

FELT vs. BRISTLES.

[From *New York Home Journal.*]

"No one who has for some time used the recently-invented felt tooth-brush, as has the writer of this paragraph, will ever consent to return to the use of bristles. **The comfort,** and the **sweetness** and **sensation** of utter **cleanliness** which it brings are so pronounced that the very thought of returning to bristles awakens a sense of discomfort. The **Felt** not only cleanses, but **polishes** the enamel. This is very important as a preventive of decay," etc.

YALE'S POPULAR PROFESSOR

of Mathematics concisely voices the universal sentiment invariably caused by its continued use.

YALE COLLEGE, April 16, 1888.

Gentlemen:—I would not be without it.

EUGENE L. RICHARDS.

ITS ECONOMY. Holder (imperishable) 35 cents. "Felts" only need be renewed. 18 (boxed), 25 cents. Dealers or mailed.

HORSEY MFG. CO., Utica, N. Y.

IMPORTANT

TO THE

MEDICAL PROFESSION.

Send your address to THE NEW YORK PHARMACEUTICAL COMPANY, BEDFORD SPRINGS, MASS., for Illustrative Hand-book, **FREE,** containing valuable formula, special directions, and the testimonials of one thousand physicians in favor of the great merits of

HAYDEN'S

Viburnum Compound,

IN FEMALE DISEASES.

Also, the

URIC SOLVENT,

For KIDNEY DISEASES, and complaints arising therefrom.

MIND-CURE.

POPULAR VAGARIES THE RESULT OF POPULAR IGNORANCE.

The mind-cure craze, with its various modifications of faith-cure, mental healing, Christian science and other foolishness, appears to have originated in this city, whence it has spread in all directions, until there is hardly a city or town of any size in the country but has one or more disciples of this latest development of the art of healing all manner of diseases without the aid of physician or medicine. We must confess that we have not a very clear comprehension of the intricate doctrines of this new school, and, in fact, have never heard or read any thing on the subject from its disciples, which has lifted in the slightest degree the cloud of ignorance in which we are enveloped. Neither do we see in what the "faith-healer" differs from a "Christian scientist," or a "metaphysician" from the only original "mind-healer." The explanations given by the adepts in these mystic arts have an amusing resemblance to the theory of the famous Keeley motor as elucidated by its inventor,—"sound and fury, signifying nothing." We understand, however, that the general idea as agreed upon by the different sects is, that there is a certain power in the human mind which influences the material body, and may do so to such an extent, particularly when strengthened by faith in the power of the Supreme Being, that disease may be cured without the aid of material medicine or medical care of any sort. The good effect of the companionship of a cheerful and strong-minded person upon one of a feeble and depressed spirit is undeniable. Often, from long-continued illness the patient is brought into such a condition that he takes his illness as a matter of course, loses all confidence in himself, and makes no effort whatever towards recovery, even when the natural course of the disease is entirely terminated. In such a case, the performances of a bright, cheerful, vigorous mind-healer, who assures the patient that there is nothing the matter with him, and he has only to say that he is well and he will be well, would doubtless have a surprising effect; but in such a case there is no more a cure of disease than there is in urging forward a tired or lazy horse. We do not believe that there is any power whatever in the human mind to change the natural course of any organic or functional disease in the slightest degree. We all know that pain exists, and have known what it is. A person suffering from toothache is not easily convinced that there is "no such thing as pain." He is unpleasantly aware that there is such a thing as the toothache, and that the only effective "mind-cure" is to make up his mind to interview the dentist. And if the power of the will cannot even stop the vibrations of an exposed dental nerve, how much less effect must it have upon the progress of any serious disease where the most important functions of the system may be impaired, the tissues themselves structurally changed, or the bones broken! for some persons even go so far as to say that broken bones may be made to mend themselves by this wonderful power, and soberly give instances occurring in their own experience. There is but one answer to make to these persons who tax our credulity with such stories, and that is the answer to a certain classical conundrum involving an impossibility,—the boy lied. A very strong point in favor of the mind-cure is, the fact that the tendency of the majority of diseases is towards recovery. Regular physicians are every day trusting more and more to the *vis medicatrix naturæ*, and less to the power of drugs and chemicals. Simple remedies and good nursing are half the battle; and if a patient afflicted with the mumps, measles, sore throat, or even some of the more serious diseases, is treated by any of the different classes of mental healers, he will probably recover, and another victory is scored for "Christian science." The fact that he would have got well anyway, even if he had been "conjured" by a negro voudou or annointed with oil by a Mormon elder, is not taken into account. An enthusiastic healer once related to us the remarkable success he had had in the treatment of a small boy who had developed an exceedingly vigorous boil. "The treatment was perfectly successful," he declared. "Did the boil break?" we inquired. "Oh, yes, after a week's treatment it broke, and the child was soon perfectly well." We said nothing more, but recalled to mind several instances in our own personal experience where these "Job's comforters" had broken without the slightest exercise of faith, will-power, or even Christian science on our part. The acceptance of such absurd theories among so many persons of superior intelligence and intellectual ability is hard to account for, and we can only explain it by the lack of scientific training in the schools. So much time is taken up with the dead languages, or wasted in innumerable studies of little or no importance, that no time is left for the attainment of the power to make observations correctly, and reason upon them in an intelligent and scientific manner; and until a radical change is made in this respect, we fear that mind-cures, patent medicines, Keeley motors, perpetual motions, and the thousand-and-one humbugs of every-day life, will continue to flourish and gather in their dupes as heretofore.—*Pop. Science News.*—June.

POTELINE.—The remarkable substance known as poteline is formed by a mixture of glycerine, tanin and gelatine, to which may be added the sulphate of baryta or zinc white. The resulting mass may be colored by the addition of vegetable colors. White poteline heated can be molded, and when cold it is susceptible of every kind of manipulation, such as turning, filing, boring, etc., and takes a very fine polish.

The Standard of Excellence.

KINGSFORD'S

OSWEGO

Pure and Silver Gloss



STARCH

KINGSFORD'S

OSWEGO CORN STARCH

FOR

Puddings, Custards, Blanc-Mange, Etc.

THE PERFECTION OF QUALITY.

WILL PLEASE YOU EVERY TIME.

Always ask your Grocer for these goods.

COLDEN'S LIQUID BEEF TONIC.

ORIGINAL LABEL:
"Colden's Liebig's Liquid Extract of Beef and Tonic Invigorator."

AN INVALUABLE AID IN THE TREATMENT OF ALL CASES OF DEBILITY.

Established 15 Years. Endorsed by Scores of Physicians. Essentially Different from all other Beef Tonics. Beware of Imitations.

COLDEN'S LIQUID BEEF TONIC consists of the Extract of Beef (by Baron Liebig's process), spirit rendered non-injurious to the most delicate stomach by extraction of Fusel Oil, soluble Citrate of Iron, Cinchona, Gentian and simple aromatics. An official analysis of this preparation by the eminent chemist ARTHUR HILL HASSALL, M. D., F. R. S., and an endorsement by SIR ERASMUS WILSON, F. R. S., is printed on the label of each bottle.

Its Range of Action Embraces all Cases of Debility.

By the urgent request of several eminent members of the medical profession, I have added to each wineglassful of this preparation two grains of SOLUBLE CITRATE OF IRON, and which is designated on the label as "No. 1," while the same preparation, without Iron, is designated on the label as "No 2."

It acts directly on the sentient gastric nerves, stimulating the follicles to secretion and gives to weakened individuals that first pre-requisite to an improvement, an appetite.

☞ *I will, upon application, send a sample bottle of Colden's Liquid Beef Tonic to any physician in regular standing. Please ask your Dispensing Druggist (if he has not already a supply) to order it. In prescribing this preparation physicians should be particular to mention "COLDEN'S" viz: "EXT. CARNIS. FL. COMP. (COLDEN). It is put up in pint bottles and can be had of Wholesale and Retail Druggists generally throughout the United States.*

C. N. CRITTENTON, Sole Agent,

115 Fulton Street, N. Y.

Please Mention the AMERICAN ANALYST.

BAKING POWDERS.

SOME MISAPPREHENSIONS CORRECTED.

To some it may appear trite constantly to read about the false and misleading statements of the Royal Baking Powder Company—but there are many of our readers who are impressed by the bold falsehoods of that concern, and argue that the statements so widely disseminated in double leaded advertisements and paid for editorials in the generally accredited religious press, must be true. So we are compelled from time to time to prick these royal bubbles by exposing their utter falsity and pointing out the trickery of the cunningly devised misstatements. In this instance we will give that concern the benefit of our circulation for one of these aggregations of stupendous lies for which they have become famous, and on the strength of which they have succeeded heretofore in leading an over confiding public to buy their wares, and thus have been enabled to get up a monopoly which has been partially successful in putting it in their power to make enormous profits to divide in dividends and salaries until the participants therein have finally begun a legal fight among themselves, verifying the old saying about thieves falling out, benefiting the honest man. The following is the advertisement referred to as cut from the New York *Tribune* of May 30th, the italics and figures in parenthesis are ours:

"WHY ROYAL IS THE ONLY ABSOLUTELY PURE BAKING POWDER.

The absolute purity of the Royal Baking Powder is a fact not questioned by anyone; but the questions are frequently asked: (1) *Why do not other manufacturers also put up more baking powders, free from lime, alum, and other adulterants?* (2) *Is it a fact that the Royal is the only pure and wholesome baking powder made?*

There are three classes of these articles: (3) The cheap powders which are made of alum and are concededly poisonous. (4) The phosphate powders containing from 8 to 12 per cent. of lime, which is an ingredient of the phosphate used in them, and inseparable from it; and the cream of tartar powders.

The cream of tartar baking powders, to which class the Royal belongs, to be pure must be made from absolutely pure materials. (5) *The ordinary cream of tartar of the market contains lime. The Royal Baking Powder is made from cream of tartar specially refined and prepared for its use by patent processes by which the lime is totally eliminated.* There is no other process by which cream of tartar can be freed from lime—made 100 per cent. pure—in quantities practical for commercial purposes. (6) *Other baking powder makers, not being able to obtain these chemically pure goods* (which are used exclusively in the Royal), are dependent upon the cream of tartar of the market, refined by the old-fashioned methods, by which it is impossible to remove the lime and other impurities.

(7) These are the reasons why the Royal is absolutely pure, while other baking powders contain lime or alum.

The absolute purity of the Royal Baking Powder not only renders it more perfectly wholesome, but its freedom from all extraneous substances makes it of higher leavening strength and effectiveness."

There are a few questions asked and some deductions drawn which we wish to answer and comment on. The heading and first sentence are assumptions of fact entirely devoid of basis as we shall show. Question 1. We answer that several other manufacturers of baking powders who do not need to tell falsehoods to sell their goods, do put up baking powders entirely free from lime, alum, and other adulterants, and many of them much purer goods than the Royal. To question 2, we say it is not only not a fact but a positive falsehood that the Royal is the only pure and wholesome baking powder made. 3. While there are no doubt many cheap and deleterious powders made and sold, it is not true that all which are made of alum are concededly poisonous for no chemist of any repute and not wearing the collar of the Royal Baking Powder Company has yet even asserted that an ammonia alum baking powder properly made is poisonous. 4. It is a barefaced lie that the phosphate powders contain from 8 to 12 per cent. of lime, but it is a positive fact that even the poorest phosphate baking powder is preferable to the Royal. 5. There is but one kind and grade of cream of tartar made in this country, and by a pooling arrangement between the manufacturers of cream of tartar, all cream of tartar turned out by them must be of a given standard. The only way in which this can be obviated is by the New York Tartar Company, the only concern in the pool controlled by a baking powder manufacturer, they being practically one and the same with the Royal Baking Powder Company, and can furnish them insufficiently purified or partly finished cream of tartar. Every cream of tartar baking powder manufacturer must buy this pool cream of tartar and can get no other, therefore one manufacturer gets as pure cream of tartar as another, the Royal alone excepted, they being the only concern having facilities for obtaining a cheap and impure article, and it lies entirely with their honesty what they will do. How much dependence may be placed upon that may be judged from their methods of advertising. 7. The reasons we have given show how little truth there is in this advertisement. The much flaunted advertisement of heavy black lines pretending to show the relative strength and value of different baking powders is just as truthful and reliable as the statements in this advertisement.

CROCKERY POISON.

VITRIFIED PORCELAIN VS. EARTHENWARE.

One of the leading subjects of conversation at present is the question that has been raised by the statement in a contemporary that earthenware glazes are poisonous. The argument in this question has been very one-sided, for all parties with whom we have talked are inclined to regard the idea as entirely unreasonable. One of the fairest, frankest statements we have received was from a gentleman who is in a position to know just what the difference is between vitrified hard porcelain and regular earthenware, and we think his opinion on the subject is worth more than any chemical analysis. Having once been a manufacturer of earthenware, he knows what crazing means, and presuming that it is crazed goods that are attacked by the critics and alarmists, he claims that the worst that can be said of crazed earthenware is that it becomes discolored and noisome, and therefore disagreeable and unpleasant. If all earthenware were crazed, this would be the weightiest objection that could be raised against it. But such is not the case, for the proportion of crazed goods found among the productions of earthenware makers is small in comparison with the volume of goods produced. In fact, we are pleased to say that crazing is on the decrease to such an extent that the majority of makers guarantee to replace all crazed goods after a certain time. It is policy to do this for various reasons. In the first place, manufacturers of earthenware are fully aware of the objections that are prevalent to crazed ware, as well as to the fact that it will occasionally occur in spite of all precautions, and they recognize the equity of replacing crazed goods wherever they may be found. It is readily seen, therefore, that it is impossible that any great proportion of crazed goods should get into actual use. Hence the claim that poisonous matter can be absorbed by food eaten from sound earthenware is empty and without reason. Earthenware in its various grades will continue to be made until the chemists can produce something better that can be made equally as cheap, so that it can be bought and used by the masses, and until then people will continue to use it without apprehension of fatal results. It is our belief that if human beings might be exempted from every other danger that threatens life, they might live forever on Dr. Hammond's plan and use earthenware eternally.

We quote the above from *Health and Home*, Chicago, but it is evidently copied therein from some other journal unknown to us, as we notice that the journal referred to does not give credit for clippings from exchanges. Like all attempts to answer our articles on the subject, it gives no facts but deals in mere assertions.

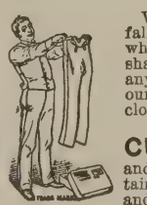
BURNETT'S PERFECTLY PURE HIGHLY CONCENTRATED Standard Flavoring EXTRACTS

THE superiority of these Extracts consists in their
PERFECT PURITY AND GREAT STRENGTH.

There is no subject which should more engross attention than the purity of the preparations which are used in flavoring the various compounds prepared for the human stomach.

They are not only true to their names, but are prepared from fruits of the best quality, and so highly concentrated that a small quantity only need be used.

JOSEPH BURNETT & CO., Boston, Mass.



We begin next September our usual heavy fall advertising. Before then we wish to know which papers will pay us best. Therefore we shall, until September 1st, send **FREE** to anyone mentioning the paper in which he saw our advertisement, our package 20 samples cloth, from which we cut to order the

FAMOUS PLYMOUTH ROCK CUSTOM-MADE $3 PANTS

and **Suits at $13.25.** Each package contains guaranteed self-measurement blanks, and a linen tape-measure, with full instructions.

PLYMOUTH ROCK PANTS CO.,
18 Summer St., Boston. 285 Broadway, N. Y.
Address all mail to Boston Office only.

"ROYAL POLISH"



The Most Reliable Dressing FOR Ladies' and Children's Shoes.

It is the BLACKEST.
It COATS the Leather the LEAST.
Does NOT INJURE the Finest Kid.

There is nothing AT ANY PRICE equal in quality, or so convenient and CLEANLY TO USE.

SOLD EVERYWHERE.

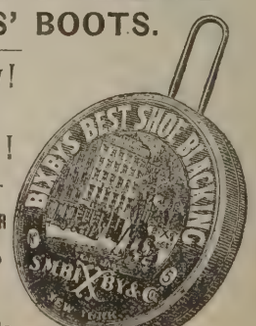
Ask Dealers for "BIXBY'S ROYAL POLISH."



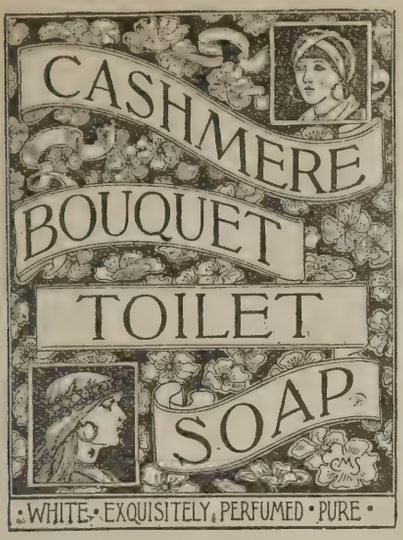
"BIXBY'S BEST"
For GENTS' BOOTS.

Shines Quickly! Saves Labor and Leather!!

—TRY— "Size 5" OR "Size B" WITH Pat. Sliding Handle



THE MOST PERFFECT EVER INVENTED.
Working under the box, ready for use when wanted



BORROWING UNDER DIFFICULTIES.

NEW YORK LOAN BROKERS.

Enterprising individuals have been enabled, with little capital and no experience, to obtain quite a handsome income by shrewdly taking advantage of the necessities of their fellow men. It would hardly seem credible that much money could be obtained from the impecunious and those who, having a little personal or real estate, are looking about for some way out of financial difficulty. There never was a man yet who was not certain that if he could get money enough to help him out of his present difficulty, everything beyond would be plain sailing. For such people very ingenious traps are laid by a large class of so-called loan brokers. A few among these are reliable, but the large majority are simply common swindlers, who, by adroitly worded advertisements, lure their victim on, and by holding out false hopes of immediate relief, get what little money he has left from him; or, if they succeed in obtaining a loan for them, charge three fold what it would have cost him, if he had known enough to apply to reliable parties. To get an idea of this business, one must scan the financial column of the Sunday edition of the New York *World*. We will give a few illustrations, taken at random.

SECOND MORTGAGES FOR SALE.—STATE what amount you want. Address ———

It is very safe to state that this advertiser has not a single mortgage, but by this advertisement tries to find those who have money to invest on second mortgages, and then will look for his prey among those desiring to borrow, and for every thousand dollars which he can hear of as being for loan, he will offer ten thousand dollars to those seeking loans. Those who really get the money will pay a very large bonus, a round commission and a big lawyer's bill, all of which serve to contribute a slice to the loan broker. The next advertiser poses as a philanthropist, and shrewdly pays for an extra word to bring his advertisement to the head of the column, where they are arranged alphabetically by putting "A" at the commencement. He evidently prefers to deal with ladies. But, read the advertisement and judge what the guarantees of this anonymous advertiser are worth.

A.—I PRESUME THAT THERE ARE HUNdreds of persons, particularly ladies, here and in Brooklyn, who do not know that they can borrow money on furniture in use, or other personal property; or, if so, do not wish to borrow off regular brokers, fearing publicity, etc. I guarantee liberal terms, strictest confidence and reasonable time. Address, "Friend."

He disclaims being a regular broker, and is probably a very irregular one. What he will do for any anxious borrower can be readily guessed. The next applicant for business puts all his supposed good points in his advertisement. How well he fulfills these promises is very doubtful.

ATTENTION!—LOANS ON FURNITURE—$25 to $200, promptly, without removal or inconvenience; confidential; lowest rates; instalments.

The next one brags of his liberality and calls specifically upon impecunious country merchants. Perhaps they are not considered quite as sharp as city borrowers. He debars usury. What a philanthropist.

ACCOMMODATION LIBERALLY AFFORDED; country merchants assisted; money to lend on Westchester property; usury debarred.

The next, by the address, would make the happy borrower believe that they have been incorporated to become public benefactors. Be that as it may, you will find, if you should call on them, that they are "all business, only business, you know."

ADVANCES ON FURNITURE WITHOUT REmoval; expeditiously; confidential; terms satisfactory.

The next two are merely shaking the bushes to see what will drop.

WANTED—$80,000 AT FIVE PER CENT., three to five years, on west side Harlem property. Bona fide lenders only.

WANTED—$25,000 ON PROPERTY WORTH double, near City Hall, for five years, at 4 per cent. Address ———

The four we now come to are the typical loan brokers They never have a cent to loan, but are willing for a prospective consideration to look for money to loan.

$330.000 TO LOAN AT 4½ PER CENT. ON city real estate.

$500.000 TRUST FUNDS TO LOAN AT 4½ per cent. interest for five years on city real estate. Liberal loans on tenements.

$700.000.—4½ TO 6 PER CENT., NEW York, New Jersey and Brooklyn.

$750.000 ON FIRST AND SECOND MORTgages; leasehold and building loans.

We have shown enough to prove that there is no hope for a borrower if he applies to one of these fellows. If the would-be-borrower on real estate has good security to offer, he can always get money from the savings banks and insurance companies without paying a brokerage, and in most instances without paying more than actual disbursements. If the security is questionable, let him advertise, putting his best foot foremost, and he will obtain his loan as quickly and as cheaply as through a loan broker. If he has no security, he cannot borrow. The lesson we are trying to teach is that unfortunates, who think they must borrow money, would do better to try and get the loan themselves from principals only, and if they fail, they had better give it up entirely. But, beware of loan brokers.

Now we come to those who utilize the religious press for catching their victims, the various western farm loan companies and firms. These offer fabulous interest rates to would-be-investors. Money is plentiful in the West, and anything worth loaning on is gobbled up. With this hint, our readers may judge what confidence they can put in these specious promises. There may be honorable exceptions, but we have yet to hear of them.

HOUSE MOTHS.

HOW TO GET RID OF THOSE DOMESTIC PESTS.

"Have you anything that is sure death to moths?" asked an anxious-looking housekeeper of a druggist the other day.

The druggist smiled, looked as though he would like to say "chestnuts," but answered: "So you belong to the moth-persecuted multitude of housekeepers? Well, for articles to be packed away in boxes or drawers, there are several things I can recommend. Some people prefer one remedy, some another. You will find some families putting their faith and their winter clothes in snuff or tobacco; others favor red pepper; but for many years I have used camphor, and consider that the best of anything. There is nothing disagreeable about it, and moths don't seek it as a regular diet; in fact, will never come where there is the camphor odor."

"Doesn't it evaporate too quickly?"

"No. Put in good sized pieces, and there is no danger from that source. A piece as large as your fist in six months or a year will be the size of a hickory nut, and the odor will penetrate every part of the box or drawer where the clothing is packed.

"Cedar chips are also a preventive," he continued. "Sprinkle them in among goods packed away, and you will have no moths. But they are not very easily obtained. Sometimes they can be found at a cigar box factory, but there are not enough to make their use very general.

"The best way of all," he added, "is to have a large cedar chest and pack everything in that. But such chests are expensive, and common mortals must content themselves with other methods."

"Can moths be kept out of things that are in everyday use, like carpets, furniture, curtains, etc?"

"A good housekeeper should never be troubled with moths in a carpet, for if it is swept thoroughly, especially the edges and corners, moths will not make it their abiding place. Newspapers laid under a carpet are said to be an effective aid in driving away these troublesome pests, but hard sweepings are more reliable. If a room is to be shut up for any length of time, something should be sprinkled over the floor.

"Portieres and all curtains must have frequent shakings, or the moth millers will be sure to follow in their folds. The great object is to keep them out of a house, for when they once locate and take up a claim they have a 'squatter's right,' and only force can drive them out."

"But how are the unfortunates, who already have them in their houses, to get rid of them?"

"For such cases I know of nothing better than some of the moth powders. The other things I have mentioned are preventives against moths, but these powders kill the moths themselves."

"Are they poisonous?"

"No. They are perfectly harmless. The moths don't eat the powder, but are suffocated by it. The powders are made from a tree that grows in Persia, and will kill anything that hasn't lungs. I sprinkle it plentifully around a room where there are moths, shut up the room for a while, and what moth-heaven gains we lose. The powders are good to put under carpets, and if a house is to be closed, should be liberally used in every room. A carbolic acid dilution is also very good for anything that can be dampened without injury."

ELECTRIC RAILWAYS.—There are in the United States over eighty miles of railroad on which the motive power is electricity.

WIRE SHOES.—A Nuremburg inventor has produced a shoe composed of wire net overlaid with a substance resembling india-rubber. These soles which cost but half the price of leather, have been tested in the German army and found to be twice as durable.

TWO-POINTED NAILS.—A new double-pointed nail is the invention of an ingenious woman. The points turn in opposite directions. They are especially useful for invisible nailing in woodwork. It is simply two nails joined firmly, the sides of the heads being placed together.

PETROLEUM FUEL.—Supervising Inspector Lubbock of San Francisco, having reported to the Treasury Department that petroleum is not safe fuel for large boilers, has been instructed by Secretary Fairchild to withdraw all permits heretofore given for its use except in the case of small steam launches.

COLOR OF GLASS.—It is found that nearly every kind of glass, especially that containing manganese, is liable to a change of color by the action of sunlight, but can be restored to its original color by heat. Stained glass in windows that has changed tint through solar action can thus be restored by heat.

American Analyst,

Published on the 1st and 15th of each month.

Subscription, - - - - - - $1 per year.
Single Copies, - - - - - - 5 cents.
Subscriptions to foreign countries, - $1.50.

Remit by Express Money Order, Draft, P. O. Order, or Registered Letter.

Advertising rates on application.

EUROPEAN AGENCIES.

On file at "American Exchange," 449 Strand, London; and American Exchange," 35 Boulevard Des Capucines, Paris.

THE ANALYST PUBLISHING CO.,
Publishers.

H. LASSING, M. D., } *Editors.*
T. P. McELRATH, }

No. 19 Park Place, ... New York.

NEW YORK, JUNE 15, 1888.

TO OUR EXCHANGES.

To facilitate delivery here, we would ask our exchanges kindly to address

THE AMERICAN ANALYST,
19 Park Place,
New York.

ANSWERS TO CORRESPONDENTS.

HOME.—*What is Hunyadi Janos?* A mineral water imported from an adjoining spring to the well-known "Ofner Bitterwasser." It can be made artificially much cheaper by mixing sulphate of magnesia and sulphate of soda half an ounce each, sulphate of potash two grains, bicarbonate of soda eight grains, salt twenty grains in a half pint of water. The dose is one wine glassful before breakfast.

MOBILE.—*What is the Carbolic Smoke Ball?* An exchange says it is a little ball of red cloth containing a greyish powder, which, on being snuffed up the nose, creates irritation and produces sneezing. It probably consists of licorice powder, flour and white hellebore. The ball is to be held under the nose when by a snap of the finger some of the powder is dusted out and thus inhaled. This ball is sold for $2.50

THE LATE THOMAS MCELRATH.

This community has since our last issue experienced a great loss in the death of one of its oldest and most distinguished citizens, Mr. Thomas McElrath, who died on June 6th, in the 82d year of his age. Mr. McElrath had been identified with the prominent interests of the metropolis for the past sixty years, and had rendered conspicuous services to the State as well as to the national government both here and in Europe in various positions of high responsibility. Nearly fifty years ago he was one of the founders of the *New York Tribune*, having, as a partner of Horace Greeley, conducted the business management of that paper from its earliest days down to the period of its greatest financial success. At the time of his death he was a stockholder in the Analyst Publishing Company, having been one of the original officers and promotors of the enterprise.

A CORRECTION.

In our last issue, in the article on "Foods in New Jersey," we referred to the Maltine and Trommer Malt Extracts, stating that the latter preparation had been very much puffed in a report previously issued from another State. This is liable to create a wrong impression. In that report maltine was also favorably mentioned; in fact, as being one of the four malt extracts "which being in a solid or semi-solid form, while the other seven so-called malt extracts were practically identical with malt liquors, and possessed no diastasic power." Thus it will be seen that by Professor Leeds' report maltine has again been found to be what is claimed for it, a true malt extract in the sense that it possesses the power of converting starchy food. As it has taken years of experimenting at great expense to make maltine a permanent preparation, never solidifying without detracting from its virtues, we hasten to make this correction.

OATS AND MORPHINE AGAIN.

The following communication from Dr. Francis Wyatt is so lucidly self-explanatory that we publish it without comment:

NEW YORK, *June* 7, 1888.

Editors AMERICAN ANALYST:

SIRS: Accept my thanks for the clipping from the June issue of *The Druggists' Circular* containing a letter from Dr. Eccles upon the subject of "Scotch Oats Essence." I am all the more obliged since, not being a druggist, and having therefore no use for the organs of that trade, I should have certainly never seen or heard of this communication but for your courtesy. Like a good many other poor mortals, Dr. Eccles is ungrateful! Instead of thanking me for my kindly criticism and good-natured suggestions, he has had the weakness to lose his temper, and the bad taste to call me ugly names! Why does he bespatter his writing with such unsavory slime? Why does he rather seek to vilify me than to justify by some serious argument the accuracy of his mode of testing for morphine? What has he to complain of? Did I not give him an exceptional opportunity of setting himself right with the profession, and of explaining how he dealt with his sample after thoroughly depriving it of alcohol? Did I not actually *prompt* him to say that, after evaporating it and before attempting to follow the method of Dr. Squibb, he had filtered his residue and brought the essence back to its original bulk with distilled water? Either he will not, or he can not, or, at any rate, he does not make any such admission, and I am therefore compelled to assume that, like the existence of albuminoid, gummy, coloring, or extractive matters, inorganic acids, bases or salts, he ignored this essential formality. Under these circumstances, I repeat with even more emphasis, that unless he worked upon a sample differing in all particulars from mine (which was purchased in the open market), he could not, by his *modus operandi*, have discovered morphine, even if he had himself placed it in the bottle before commencing his operations. Dr. Eccles sneers at my ignorance for speaking of the "methods prescribed by Dragendorff." In doing so, he unconsciously pays me a very high compliment, and casts me into the midst of the best of all good company! He will find, upon enquiry, that the same *ignorance* (?) of this investigator and of his work is displayed throughout the books of A. W. Blythe, A. H. Allen, Dr. Muter, Professor Prescott, A. Gautier, Bolley and Kopp, and Ad. Wurtz, whenever these authorities anywhere make allusion to methods used in toxicological research. With singular obtuseness, and as it strikes me with quite unnecessary coarseness, Dr. Eccles attempts to make some fun out of my search for *meconic acid* in Scotch Oats Essence! Does not the laugh turn against himself, however? What chemist, instructed as I was, to search for opium or any of its salts, would have neglected this precaution? Dr. Eccles has grouped together, with a regularity and an accuracy suggestive of a chemical handbook, a number of characteristics generally attributed, under varying conditions, to morphine, and magnanimously offers me a cheque for twice the fee you originally paid me, if I will name any other body possessed of identical qualities! Supposing I were to do as he requests—what then? Would that have any bearing upon the point of controversy? Would it prove, or tend to convince us, that even if there really was morphine in the nostrum we are discussing, Dr. Eccles' method could have eliminated it from its surroundings? The whole question, in my opinion, lies within a nutshell. All I want to be enlightened upon is the value of the analytical method *he* employed. No amount of opprobrious chicanery can possibly serve to edify me. In the profession of which I have the honor to be an humble and unpretentious member, there is a generally respected rule which requires the strict observance throughout any form of argument, of those formalities characteristic of and common to the intercourse of gentlemen. If Dr. Eccles expects me to notice any further remarks he may deem it expedient to address to me, he must condescend to bear in mind that this is a professional, not a personal discussion, and that, being so, it must be conducted in language I can both use and understand.

Respectfully yours,
FRANCIS WYATT, Ph. D.

HARD PORCELAIN VS. POTTERY.

The various articles we have published on this subject have aroused a great deal of popular interest in this subject, as we judge from numerous letters received, as well as from the frequent quotation of the articles in our exchanges. Though the trade journal in that line, the *Crockery and Glass Journal*, very boldly challenged us to the proof, when the first article appeared, it has since kept very quiet, as if our proofs and the strong array of facts we presented had convinced that journal that they were treading on dangerous ground when they wrote about anything in the pottery line but pottery gossip and free trade. As we want to be fair to both sides, our columns are open to any reply from the manufacturers of soft porcelain, but we, of course, reserve our right of replying editorially. We hope they will accept our invitation.

A VAST LAND SCHEME.

Congress has been asked for an appropriation of two hundred and fifty thousand dollars to pay for the preliminary work of damming up the cañons of the Rocky Mountains, from the Dominion line to Mexico, and thus forming vast reservoirs of water to be used in the irrigation of arid lands, and preventing the disastrous floods on the lower Mississippi. The area of arid land in the United States is about 1,300,000 square miles; and Major Powell, director of the National Survey, estimates that at least 150,000 square miles of this might be reclaimed—a territory exceeding in extent one-half of all the land now cultivated in the United States. The plan is to build dams across all the cañons in the mountains, large enough and strong enough to hold back the floods from heavy rains and melting snows, and then to let the water down, as it may be needed, upon the lands that would be reclaimed. The preliminary work for which the appropriation is asked is to pay for surveys to determine the sites and locations for the dams, reservoirs, canals and irrigation areas; the total volume of water susceptible of storage, and the loss through evaporation and seepage in the reservoirs and canals; the area of land to be served by a unit of water; the value of the redeemed land for the growth of the crops adapted to the climate and soil; the expense of constructing the dams and canals and the expense of maintaining them; what vested rights, if any, exist. With ample appropriations, at least two years will be required for this preliminary work. Major Powell, who has probably studied the Rocky Mountains and arid regions

more carefully than any one else, declares that the scheme is a perfectly feasible one, and that the cost, though very great, will be but a small fraction of the value of the land reclaimed. While the western portion of the United States is not yet crowded when compared with Europe, or even with other parts of our own country, it is no longer true that "Uncle Sam is rich enough to give us all a farm." But, if 150,000 square miles of the arid lands of the United States could be reclaimed, the limits of our agricultural development would be enormously extended.

HISTORIC GEMS.

SOME NOTED COLLECTIONS OF JEWELS AND PRECIOUS STONES.

The following is an extract from a paper lately prepared by Mr. George F. Kunz, of Tiffany & Co., New York, which will be used as the basis of a report on precious stones, to appear in the volume on "Mineral Resources of the United States," issued by the United States Geological Survey a few months hence:

"A regrettable dispersion of jewels and precious stones took place on May 12 and 14, 1886, when the famous collection formed by the late Henry Phillip Hope, and exhibited at the South Kensington Museum for many years, was sold at auction. The Hope collection included the *saphire merveilleaux* of Madame de Genlis's 'Tales of the Castle;' the King of Candy's cat's-eye, the largest known, having a diameter of an inch and a half; the Mexican sun-opal, carved with the head of the Mexican sun-god, and historically known since the sixteenth century; an enormous pearl, the largest known, weighing three ounces, and two inches in length; the aquamarine sword-hilt made by Murat, King of Naples, and also many curious diamonds, sapphires, emeralds, and several hundred unique and magnificent gems. Such a collection should be preserved intact as a national possession. In 1886 it was decided by the French Assembly that the crown jewels, with the exception of the famous 'Regent' diamond, two of the mazarines, and a few historic pieces reserved for the national museums, should be sold at public auction. These exceptions were made because it was feared that they would fall into the hands of Americans. The sale of this great historic collection took place in May, 1887. The 48 parcels were subdivided into 146 lots; and there were 68 buyers, 12 of whom bought over 1,000,000 francs' worth each. The largest lot, the great corsage, which sold for 811,000 francs, was purchased by a single American firm, the largest buyer at the sale. The purchases of the firm amounted to 2,249,600 francs, or about 34 per cent. of the entire sum realized; while as to quality, the same firm obtained more than two-thirds of the finest gems. Among them were the three mazarines; a pear-shaped rose brilliant, weighing $24\frac{7}{32}$ carats, for 128,000 francs; a pear-shaped white brilliant, weighing $22\frac{1}{4}$ carats, for 81,000 francs; a white brilliant, weighing $28\frac{7}{16}$ carats, for 155,000 francs; and an oval brilliant, weighing $18\frac{1}{32}$ carats, for 71,000 francs; or 435,000 francs for the four. All but one of their purchases were secured by private American customers. The great interest attached to this sale was due not only to the fact that many of the gems were of very fine quality, but also to their historic associations. The history of many of them could be traced back several hundred years. In its way this sale did more than anything that had before occurred to establish a reputation abroad for American taste, wealth, and enterprise. The collection of antique gems, numbering 331 pieces, formed by the Rev. C. W. King of Trinity College, England, the greatest of all writers on engraved gems, was sent to the United States for sale in 1881. This collection represents the keystone and the summing-up of Mr. King's vast knowledge, and none has ever been more thoroughly studied. His numerous writings mark an epoch in the study of this branch of archæology; and only the loss of his sight led him to part with his treasures. The growing interest and taste in archæological matters in the United States induced him to send it here to be sold intact. In October, 1881, through the friendly mediation of Mr. Feuardent, it was purchased, and presented to the Metropolitan Museum of Art by Mr. John Taylor Johnson, then president of the museum, where it has since reposed. Near it will be placed the Somerville collection. Mr. Somerville, a Virginian by birth, and a gentleman of fortune and artistic tastes, while spending the past thirty-two years of his life in Europe, Asia, and Africa, has collected cameos, intaglios, seals, and other historical gems; and, as a result of his liberal expenditure of time and money, he is to-day the owner of one of the most unique and valuable collections of engraved gems in the world, numbering over 1,500 specimens, including Egyptian, Persian, Babylonian, Etruscan, Greek, Roman, Aztec, and Mexican glyptic or jewel-carving art. All of these are represented by specimens of singular excellence, affording us a panoramic view of the achievements of civilized men in this direction. This remarkable collection, now at his home in Philadelphia, has been loaned to the Metropolitan Museum of Art, New York, where it will soon be placed on exhibition, and the public will be afforded every facility to study the beautiful achievements of the glyptic art. Of greater antiquity and archæologic value, because representing a period before gems were cut in the form of intaglios, is the collection of the Rev. W. Hayes Ward, consisting of 300 Babylonian, Persian, and other cylinders. Two hundred of these he himself collected in Babylon and its vicinity, and sold to the museum at a nominal figure. Since that time he has collected 100 more cylinders. Many of them date from 2500 B.C. to 300 B. C., and are cut in lapis lazuli, agate, carnelian, hematite, chalcedony, jasper, sard, etc.

"The death of Dr. Isaac Lea of Philadelphia, which occurred Dec. 19, 1886, in his ninety-fifth year, robbed the world of a great investigator in the field of precious stones. During the last twenty years of his exceptionally long and useful life, he devoted almost his entire time to studying the microscopic inclusions in gems and minerals; and the cabinet he left contains thousands of specimens of rubies, sapphires, chrysoberyls, tourmalines, garnets, quartz, etc., all of which he had subjected to the most rigid microscopic scrutiny, noting every interesting fact on the accompanying label. Only a small part of his work on this highly interesting subject has been published by the Philadelphia Academy of Sciences, in two papers (in 1869 and 1876), but Dr. Lea made ample provision in his will for the publication of the remainder. His extensive collections of minerals and shells were bequeathed to the National Museum; and the gem-collection, to his daughter, Miss Lea. Two months before his death, I spent two hours with him, examining a series of quartz inclusions, over which he worked with all the enthusiasm and brightness of youth. One of the many benefits traceable to the New Orleans Exhibition was the appropriation given to the National Museum for their exhibit. This was wisely expended by Prof. F. W. Clarke in the purchase of a complete series of precious stones, many of which, although not expensive, are still the finest in the United States, from an educational standpoint. Since the exposition many fine specimens have been added by purchase and donation, especially the diamonds and pearls presented by the Iman of Muscat to President Buchanan, consisting of 138 diamonds and 150 pearls, all of good quality. The collection numbers about 1,000 specimens, and embraces almost every known variety of precious stones, many of them in very fine examples."

STRENGTH OF ROPE.—Wet rope is only one-third as tensile as when dry, and greased rope is even weaker.

CORN AND WATER.—It has been estimated that during growth Indian corn draws thirty-six times its own weight of water from the soil.

DOMESTIC DIETETICS.

SEASONABLE FOOD.

June.

MEATS.—Beef, mutton, lamb, veal, ham, kidneys, liver, sausage.

GAME AND POULTRY.—Pigeon, chicken, duck.

FISH.—Anchovy, bass, blackfish, bluefish, clams, cod, crabs, eels, flounder, haddock, halibut, herring, lobster, fresh mackerel, perch, porgie, prawn, rockfish, fresh salmon, salmon trout, sea bass, shad, sturgeon, turtle, weakfish, whiting.

VEGETABLES.—Beans, carrots, cauliflower, corn, cucumbers, egg plant, garlic, lettuce, onions, parsley, parsnips, potatoes, radishes, rhubarb, savoy, shallots, spinach, sprouts, tomatoes, turnips.

FRUIT.—Bananas, oranges, pineapples, strawberries.

PRACTICAL RECIPES.

TRANSPARENT SOUP.—Cut the meat from a leg of veal in slices as thin as possible, and break the bone as small as possible; put the meat into a very large jar, the bones at the top, with a bunch of sweet herbs, a quarter of an ounce of mace, and four ounces of blanched garden almonds beat fine; pour upon it a gallon of boiling water, and let it simmer over a slow fire twelve hours—all night is best; turn it into a double-bottomed tin saucepan, simmer until reduced to two quarts, remove the scum as it rises, strain it, and let it stand two hours, then pour into a saucepan, taking care not to let any of the sediment accompany it. Steep two ounces of vermicelli in water, boil it and put it in the soup before serving up.

CALF'S LIVER.—Take one pound of liver and lay it in water that is scalding hot for fifteen minutes, take out, drain, put in a saucepan and cover with boiling water, add a bay leaf and a slice of onion, and *simmer* gently for twenty minutes. Drain, and cut the liver into dice. Put one tablespoonful of butter in a frying-pan to melt; add one tablespoonful of flour; mix until smooth; add a half pint of milk; stir continually until it boils; now add to this sauce a teaspoonful of onion juice, a half-teaspoonful of salt, a saltspoon of pepper, a teaspoonful of chopped parsley and the liver; stir until scalding hot and serve.

LOBSTER CURRIED.—Take the meat of a fine lobster, or two, if small, place in a stew pan two dessert-spoonfuls of curry powder, add two ounces of butter, an onion cut in very fine strips, and three dessert-spoonfuls of fish stock. When they are stewed well, add the lobster, simmer gently an hour, squeeze in half a lemon, and season with a little salt.

CORN BREAD.—One large coffeecupful of dry, finely-bolted corn meal, one tablespoonful white sugar, a little salt, two teaspoonfuls Horsford's baking powder; sift thoroughly, then mix with one and one-half large coffeecupfuls of cold sweet milk or cold water, and add two well beaten eggs. Bake immediately in a shallow pan, or for gem cakes in a gem pan.

SPINACH.—The leaves of the spinach should be picked from the stems; it should then be well washed in clean cold water, until the whole of the dirt and grit is removed. Three or four waters should be employed; it will not otherwise be got thoroughly clean; let it drain in a sieve, or shake it in a cloth, to remove the clinging water. Place it in a saucepan with boiling water; there should be very little; it will be done in ten minutes; squeeze out the water, chop the spinach finely, seasoning well with pepper and salt; pour three or four large spoonfuls of gravy over it, place it before the fire until much of the moisture has evaporated, and then serve.

BROILED SWEETBREADS.—Place your sweetbreads in cold water for an hour; take them out and put them in a saucepan with enough water to cover. Take off the fire as soon as boiling, cool them off, split and put them on a broiler with salt, pepper and a tablespoonful of

sweet oil over them; broil slowly for fifteen minutes; dish up with a piece of fine butter on each and a dry toast under it.

HOMINY CORN PONE.—Two teacups of boiled small hominy (sometimes called grits); while hot stir in a large spoonful of butter; add four eggs and one pint of milk, one-half pint yellow corn meal; the batter should be as thick as a rich boiled custard; if thicker, add a little more milk. Bake in a hot oven.

SMALL BIRDS, ROASTED.—Clean, by washing quickly in one water after they have been drawn; season with salt and pepper. Cut slices of salt pork very thin, and with small skewers fasten a slice around each bird. Run a long skewer through the necks of six or eight, and rest it on a shallow baking pan. When all the birds are arranged, put into a hot oven for twelve minutes, or before a hot fire for a quarter of an hour. Serve on toast.

WHITE MOUNTAIN CAKE. — One and one-half cups sugar, one-half cup butter, one-half cup corn starch, one-half cup milk, the whites of six eggs, one teaspoonful of Horsford's baking powder, one and one-half cups flour, one teaspoonful of extract of lemon or almond.

STRAWBERRY CREAM.—Four quarts of thick, sweet cream, four quarts of strawberries. The berries must be mashed or bruised, caps and all, with a teacup of granulated sugar to each quart. After standing several hours, strain through a thin, coarse cloth. Put four teacups of white sugar to the cream, and then add the juice of the berries. Whip or froth the cream with a patent egg whip or common egg beater. Pour two-thirds of the cream into the freezer, reserving the rest to pour in after it begins to freeze. Raspberry cream may be made by the same receipt.

STRAWBERRY CHARLOTTE RUSSE. — Six eggs, one ounce isinglass, one quart milk. Sweeten to the taste and flavor with Burnett's extract of vanilla. Pour into molds. Then put it on sponge cake, covered with strawberry jam, and pour around the dish whipped cream, sweetened and flavored with wine.

CHOCOLATE CAROMEL.—Half a pound of chocolate, three pounds of dark brown sugar, one-eighth pound of butter, a small teacup of milk; season with vanilla or grated lemon or orange peel; boil it very quickly over a hot fire, stirring constantly; when it becomes hard on being dropped in water, take it off the fire and stir for a few moments before pouring into buttered dishes; before it is quite cool, cut into little squares; those who like the caromel very hard need not stir it, as this makes it sugary; the grated peel should not be put in until the caromel is taken from the fire.

ADULTERATION IN EUROPE.

(From the *Revue Internationale.*)

The sanitary authorities in Roumania, in their report for 1887, mention the discovery and seizure of macaroni colored with naphtaline yellow, picric acid and binitro cressol, and confectionery colored with auramin, aniline yellow, fuchsin, mononaphtol and dinitro-naphtol. Considerable vinegar essence, intended for the manufacture of vinegar, was seized on importation because it contained picric acid. Analysis were made of distilled spirits, and resulted in finding brandy made from unrectified ethylic alcohol, and colored with picric acid, benzoyl, heleanthin (methylorange) and chrysanilin. Some of it was flavored with ethylic ether, acetic ether, amyl nitrate and prussic acid. The wines sold in inns were nearly all alcoholized and flavored with amylic ether.

In Poland, wheat flour is largely adulterated by the addition, to make weight, of valueless ground vegetable matter, as well as the admixture of from ten to fifty per cent. of barley and rye flour. The result of these vegetable admixtures have been frequent cases of poisoning, including several cases of ergotism.

In Norway, where no anti-adulteration laws exist, the simple honesty of the people has so far precluded much adulteration, although milk and butter have not escaped deterioration by adulteration. The medical authorities have, however, found considerable illness caused from the use of arsenical colors in the dying and printing of carpets, curtains, furniture coverings and wall paper, especially that imported from England.

In Germany, Dr. Schweissinger found cod liver oil made of resin and mineral oils, and olive oil entirely made of rape seed oils.

In Holland, Dr. Van Hamel Roos found 705 milligrammes of common salt in a litre of wine imported from the south of France.

In Belgium, an advertisement in the public journals, emanating from Saintes, in France, offers a bottle of wine essence for a little less than a dollar, which essence is guaranteed, by the addition of water, to make 230 litres of wine. Dr. H. Thorns seized a quantity of milk adulterated with ultra marine.

In Austria, saffron was found to be heavily adulterated with sulphate of baryta, colored with eosine.

In England, a so-called Coleman's Liebig's extract of meat and malt wine, said to be composed of port wine and Liebig's extract of meat, was found to be nothing but port wine having a considerable addition of salicylic acid.

From Germany comes a circular offering a champagne at 15.60 francs per dozen bottles, including cases, packing and freight to Antwerp or Rotterdam, and adding that any kind of label desired will be furnished.

In Goirle (Brabant) a shoemaker died in consequence of having inoculated a wound by handling leather made from hides imported from Buenos Ayres, which had been treated with poisonous preservatives.

WATER.

ITS VALUE AS A CONSTITUENT OF ORGANIC SUBSTANCES.

Water, says Dr. Whitelaw, forms three-fourths of the weight of living animals and plants, and covers about three-fourths of the earth's surface. Professor Chaussier dried the body of a man in an oven, like a brick in a kiln, and after desiccation the body weighed only twelve pounds. Rather more than a pound of water is exaled daily by the breath, about 1¾ pounds by the skin, and 2¾ pounds by the kidneys, making the daily emissions of water by the body about 5½ pounds, or not quite 3 quarts. The following is the percentage of water in some well known articles:

Wheat	15	Mangel wurzel	85
Barley	15	Cabbage (leaves)	92
Oats	16	Cabbage (stem)	84
Rye	12	Mushroom	96
Rice	13	Fungi	86 to 95
Beans (field)	15	Potato	75
Beans (kidney)	23	Watermelon	94
Peas	14	Cucumber	96
Turnips	88	Vinegar plant	95
Carrots	83	Wheat flour	13 to 16
Rye flower	14	Cocoa	5
Barley flour	14	Manna	10
Maize flour	13	Figs	21
Indian corn flour	14	Plums	75
Oatmeal	14	Apples	80
Wheat bread	44 to 48	Gooseberries	80
Rye bread	44 to 49	Peaches	75
Cane sugar	5	Egg, entire	74
Linseed cake	10	Milk	87
Flesh	77	Blood	79 to 83
Skin	58	Gastric juice	97
Bones, variable	7 to 20	Trout	80
Beef	74	Pigeon	79
Veal	75	Cheese	40
Mutton	71	Hair, wool, horn	9 to 11
Haddock	82	Brandy	56
Sole	79	Whisky	47
Tea	5	Rum	30
Coffee	12	Beer	90

HORSE SENSE.—A Connecticut colt is said to have been found getting pears to eat by rubbing himself against a pear-tree until the shaking brought down the fruit which he would eat, and then return and shake the tree again.

TO NEWSDEALERS.

The wholesale agents for the AMERICAN ANALYST are the American News Company, through whom and the various news companies dealers can obtain their supplies. This paper is returnable; hence newsdealers need not run any risk and can keep a supply on hand. Dealers in the various cities can obtain their supplies as follows:

Albany, N. Y., Albany News Company.
Baltimore, Md., Baltimore News Company.
Boston, Mass., New England News Company.
Brooklyn, L. I., Brooklyn News Company.
Brooklyn, E. D., Williamsburgh News Company.
Chicago, Ill., Western News Company.
Cincinnati, Ohio, Cincinnati News Company.
Cleveland, Ohio, Cleveland News Company.
Clifton, Ontario, Canada, Toronto News Company.
Denver, Col., Denver News Company.
Detroit, Mich., Detroit News Company.
Kansas City, Mo., South-Western News Company.
Montreal, Canada, Montreal News Company.
New York, N. Y. { American News Company. / International News Company. / National News Company.
Newark, N. J., Newark News Company.
New Orleans, La., New Orleans News Company.
Omaha, Neb., Omaha News Company.
Philadelphia, Pa., Central News Company.
Pittsburgh, Pa., Pittsburgh News Company.
Providence, R. I., Rhode Island News Company.
San Francisco, Cal., San Francisco News Company.
St. Louis, Mo., St. Louis News Company.
St. Paul, Minn., Minnesota News Company.
Troy, New York, Northern News Company.
Toronto, Ontario, Canada, Toronto News Company.
Washington, D. C., Washington News Company.

A SIMPLE REMEDY.

A correspondent of *Science* gives the following interesting statement based upon personal experience: It is a fact not generally known, that, if one holds his breath, wasps, bees, and hornets can be handled with impunity. The skin becomes sting-proof, and holding the insect by the feet, and giving her full liberty of action, you can see her drive her weapon against the impenetrable surface with a force that lifts her body with every stroke; but, let the smallest quantity of air escape from the lungs, and the sting will penetrate at once. I have never seen an exception to this in twenty-five years' observation. I have taught young ladies with very delicate hands to astonish their friends by the performance of this feat; and I saw one so severely stung as to require the services of a physician, through laughing at a witty remark of her sister, forgetting that laughing required breath. For a theory in explanation, I am led to believe that holding the breath partially closes the pores of the skin. My experiments in that direction have not been exact enough to be of any scientific value, but I am satisfied that it very sensibly affects the amount of insensible perspiration.

FOOD IN NATURE.—Scientists say there is no plant that does not serve as food for some animal; but the only article used as food from the mineral kingdom is common salt.

PLANTS AND PARASITES.—Plants are injured by parasitic fungi in various ways, according to A. B. Seymour. They are deprived of nourishment; growth is abnormally accelerated or retarded, causing distortion; not only are green parts affected, but roots, stems, buds; flowers and fruit; leaves and fruit fall prematurely. decay is produced in ripe fruits before and after removal from the plant, and valuable plants receive injury from those of less value by ordinary infection.

FORMATION OF MOUNTAINS. — The attention of the French Academy of Sciences has been drawn by M. Faye, the eminent astronomer, to the apparent geological law that the cooling of the terrestrial crust goes on more rapidly under the sea than with a land surface. From this he argues that the crust must thicken under oceans at a more rapid rate, so as to give rise to a swelling up and distortion of the thinner portions of the crust; in other words, to the formation of mountain chains.

SLAG AS A FERTILIZER.—Basic slag, the refuse of steel works, when freed from iron and reduced to powder, proves to be a valuable fertilizer.

BUSINESS NOTES.

PIMPLES AND ERUPTIONS.

In the hot months of the year, the skin is liable to become disfigured by pimples, cat boils, rashes, and other annoying and unsightly disorders. If these be carefully examined their nature and cause are easily ascertained. In the case of a pimple, a small gland is distended by the oily matter it normally contains, but which, through carelessness and a bad condition of the blood, has hardened and become infused with dust from the atmosphere. The inner walls of the gland, instead of being a rich pink in color and clean and smooth upon the surface, are dark-red from engorged blood and inflammation. In some cases the trouble is so serious that the walls are broken, and both blood and lymph exude into the gland proper. The surrounding tissue is also inflamed. The result is the familiar scarlet elevation with a yellow, black or greenish core. When the tissue shares the inflammation to a great extent, some of it is sloughed off and the so-called cat boil results. A still greater sloughing produces a true boil, while a more serious breaking-up of the interior tissues gives rise to the terrible carbuncle, the greatest scourge of all the cutaneous complaints. A pimple on the eyelid is better known as a stye. Those which occur under the arms, in the groin, or wherever there is pressure or friction, are apt to become running sores or even painful and offensive ulcers. In all of these cases the predisposing cause is a depraved blood. The humors contained prevent the normal action of the glands, weaken the cleansing processes of Nature, and, in many instances, deposit impurities about the inflamed or diseased tissues. With rashes, hives, and similar eruptions, there is a small local irritation of the true skin beneath the false skin, or cuticle. The irritation occurs just beyond the minute blood-capillaries and results either from the unnatural slowness of the circulation induced by humors in the scarlet fluid of life or from the deposition or lodgment of impurities which the veins are unable to carry away.

To cure these multiform disorders requires merely the purification of the blood and the increased activity of the secretive functions. Nor should it be forgotten that the same treatment which cures is that which, if taken in time, prevents all these harassing physical ailments. Normal activity of the heart, liver, kidneys, and other organs will accelerate the movement of the blood and so carry away the impurities at any given point. In this change for the better the nerves sympathize and quickly gain new vigor and power.

To produce these simple results it is not necessary to undergo any expensive treatment or unpleasant course of medicine or diet. Exercise, sunlight, fresh air, regular hours, a liberal use of fruits and vegetables, and the employment of Ayer's Sarsaparilla—the most reliable blood-purifier known to modern science—will cure the worst forms of cutaneous disease in the briefest time, and will restore the bright eyes, clean tongue and mouth, pure breath and beautiful complexion, which are the physical expressions of perfect health, and without which there is neither comfort, beauty, nor happiness.

There are medicines which will perform many of the actions mentioned, but there is none—save Ayer's Sarsaparilla—which will do each and all, and at the same time do it pleasantly, easily and promptly. What is even of more importance, if Ayer's Sarsaparilla is taken in time, as the hot season sets in, it will prevent any cutaneous disorder and will keep the system in a perfect condition of ease and well-being.

THE MANIFOLD CYLOPEDIA.

The fifth volume of Alden's Manifold Cyclopedia, which has just been published, comprises the words in the language from "Bilbilis," the ancient Iberian city, to "brave." The excellent reputation already achieved by this publication is being thoroughly maintained as the work progresses. The present volume is extensively illustrated, especially under the scientific headings, including numerous pictures of birds and botanical specimens, and representatives of bones, the brains, etc., etc. The biographical sketches are likewise comprehensive and admirably concise. The series, when complete, will be a valuable acquisition to every library, greatly disproportioned to its actual cost.

DOLIBER-GOODALE COMPANY.

On May 4th, the corporation known as the Doliber-Goodale Company was formed in Boston, Mass., capital, $300,000; 3,000 shares at $100 each. The officers are: Thomas T. Goodale, President; Thomas Doliber, Treasurer. These, with Mr. Charles S. Kelley, of the firm of Sanford & Kelley, bankers, New Bedford, Mass., constitute the Board of Directors. The corporation takes posession from May 1st, and will carry on the business of making and selling Mellen's Food, as formerly carried on by Messrs. Doliber, Goodale & Co. Mr. Doliber and Mr. Goodale hold a little more than two-thirds of the whole number of shares, thus retaining the management of the business; the balance of the shares have been sold at par, for cash. The corporation succeeds to a prosperous business with ample cash capital with which to prosecute it.

CUTTER WHISKEY.

A standard authority, *Bonfort's Wine and Spirit Circular*, speaks as follows of this brand of whiskey which we take much pleasure in reproducing:

"A great misapprehension on the part of many dealers is the confounding of the terms "blend" and "compound." A blended whiskey is *not* a compounded, whiskey, and should not be so considered. A compounded whiskey is one to which spirits and other cheap ingredients have been added, and also preparations for making the whiskey appear older than it really is. A blended whiskey is one in which a number of fine whiskeys have been combined for the purpose of obtaining a peculiar flavor that does not appear in what are known as double stamp whiskies. Among connoisseurs a

Horsford's
ACID PHOSPHATE.

A preparation of the phosphates of lime, potash, magnesia and iron, and phosphoric acid, in solution, that is readily assimilated.

Especially recommended in all cases where the use of phosphoric acid or the phosphates is indicated, such as exhaustion of the physical, nervous and cerebral systems, gastric and liver derangement, gravel, and other calcareous deposits, cholera, scurvy, consumption, etc.

As a menstrum for the administration of strychnina, morphina, quinina, and other organic bases which are usually exhibited in acid combination, it is unsurpassed.

It makes a delicious drink with water and sugar only, and harmonizes with such stimulants as are necessary to prescribe.

Dr. G. F. WILBER, Nashua, N. H., says: "It is a very elegant method of using phosphorus."
Dr. T. C. SMITH, Charlotte, N. C., says: "I attach the highest importance to it as a therapeutic agent, of well-defined and specific value."
Dr. C. EARLE, Pontiac, Mich., says: "I do not hesitate to recommend it to the confidence of the profession."
Dr. T. B. PORTER, Freeport, Ill., says: "It is an excellent therapeutic agent."
Dr. I. W. MARTIN, Des Moines, Ia., says: "I take pleasure in adding my testimony as to its therapeutic value."
Dr. E. BROWN, Omaha, Neb., says: "I find it a very useful remedy."

Send for descriptive circular. Physicians who wish to test it will be furnished a bottle on application, without expense, except express charges. Prepared under the direction of Prof. E. N. HORSFORD, by the

Beware of Substitutes and Imitations.

RUMFORD CHEMICAL WORKS, PROVIDENCE, R. I.

blended whiskey is generally preferred to any other on account of this fine flavor. Of course, there must be skill and knowledge exercised in blending as well as in distilling, and with the leading houses in this line, the methods used are valuable and well-guarded secrets.

One of the most celebrated blended whiskies in the world, and I might add, one of the finest, is the "J. H. Cutter," owned by Messrs. C. P. Moorman & Co., of Louisville, Ky. Way back yonder, I don't know how many years, Mr. Moorman bid this brand in at auction at the enormous sum of $51,050, and its reputation, under his skillful management, has grown until to-day its customers are numbered among the inhabitants of South America, the Sandwich Islands, far-off China and Japan, Great Britain and Europe, while in this country it is the delight of the lovers of fine whiskey from Boston to San Francisco. Exactly how this house manages to bring out the delightful flavor and bouquet possessed by the "Cutter," how by adding a little of this sour mash from Bourbon County, a little of that from Nelson, and a little of that from Anderson, they gain such a rich brandy flavor, are secrets of their art to which I have never been admitted; but this much I feel safe in saying—they use only the finest whiskies made in the State of Kentucky, and after the combination has been made, the ripeness of age must mellow it into fragrance before it is honored with the charmed name of "J. H. Cutter."

Each year they make their purchases carefully, by sample. Let the price be what it may, and let the distiller be ever so obscure, if the whiskey possesses the quality required, they buy it; and many an old-fashioned distiller, who is unknown to this modern age of noise and rush, but whose whiskey is such as our fathers used to drink, discovers in this house a purchaser when all others decline to look at a whiskey of which they have never heard. All through the hills and valleys of this State are little, old-time distilleries, each making a hundred barrels or so, all of which goes to this house to become a part of the famous "Cutter." As fast as the tax matures on these whiskeys, Messrs. Moorman & Co. have them shipped to Louisville and stored on their capacious floors, where they remain until they have ripened sufficiently to blend. How long this may be depends entirely on the whiskey, as some brands develop much faster than others, the one requiring the longest time generally having the most pronounced flavor. After the blending (which, by the way, is an expensive business on account of evaporation) is accomplished, the whiskey is put into "Cutter" barrels and stored away for months or perhaps years, until the educated palate of the head of the house is satisfied that the characteristics of the "Cutter" are all visible, when it is shipped to those whose orders are on file.

A CORRECTION.

Wm. R. Warner & Co., have issued the following notice to physicians:

"We take this method of denouncing the circulation of certain erroneous reports, as being the outcome of ignorance or malice. We have no connection with the firm of H. H. Warner & Co., of Rochester. Our advertising is to the Medical Profession, and our Pills and products (Warner & Co's.) have been used and held in high esteem by the most eminent doctors during the past thirty years in the United States and in foreign countries. The therapeutic value of a remedy is ascertained by the medical practitioner, and it is the province of the manufacturing chemist to prepare the various medicinal preparations in the most correct, compatable, palatable, and convenient manner, by the aid of skill acquired by years of practice and experience. It seems to be necessary to specify Wm. R. Warner & Co's. Pills and Bromo Soda with Caffeine to obtain what you want."

LEA & PERRINS' SAUCE.

Lea & Perrins', the original and genuine Worcestershire Sauce, has been before the public over a half a century. Like all popular favorites it has long been the standard of comparison and the pattern for counterfeiters who not being able to imitate its excellence offer to the public imitations in bottling, labels and style of putting up. They dare not counterfeit the signature of Lea & Perrins which is on the red label of every genuine bottle, and of which this is a facsimile.

Lea & Perrins

To be sure of obtaining the genuine article, see that the above signature is on the label.

ANALYZE "MONON" Resolutions!?

Whereas, The Monon Route wishes to make known to the world that it has the finest system of Pullman Buffet Sleepers and Chair Cars, running between Chicago and Louisville, or Chicago, Indianapolis and Cincinnati;

And Whereas, This makes it in fact the double connecting link of Pullman travel between the winter cities of Florida and the northern summer cities; then

BE IT RESOLVED, That, before starting on a trip, be sure and address E. O. McCormick, Gen'l Pass. Agent, 185 Dearborn Street., Chicago, for rates, etc.

THE LABORATORY.

To Inventors, Manufacturers and Applicants for Patents

The AMERICAN ANALYST may be consulted upon all matters involving theoretical or applied chemistry. Advice and opinions given. Analyses and assays made. Patents perfected and secured. Terms reasonable.

Address, AMERICAN ANALYST,
19 Park Place, N. Y.

ALTHENE SKIN SOAP

An absolutely pure and perfect soap for all purposes of the toilet, nursery, bath or sick-room. Has the approval of leading chemists and physicians, and is recommended by all who have used it. Price 25 cts. a cake, or 65 cts. for a box of three. Can be obtained of the retail druggists or from

J. W. CAMPION & CO., 916 Filbert Street,

PHILADELPHIA.

BOVININE, BUSH'S FLUID FOOD,

Is the ORIGINAL and ONLY preparation of RAW FOOD that does not become putrid and disgusting in a short time.

A MOST WONDERFUL NUTRIENT.

The vital principles of Beef and Mutton concentrated. A highly condensed Raw Food Extract. Acceptable to the most delicate taste and smell. Retained by delicate stomachs that reject all other foods It assimilates more readily than any other food known to the medical profession. Bovinine under the microscope shows the blood corpuscles in their normal condition strongly marked, while in other foods or extracts this vitally important element is destroyed by the action of heat in cooking.

Containing 26.58 Per Cent. of Soluble Albuminoids,

According to OSCAR OLDBERG, Ph.D., Professor of Chemistry and Toxicology, and Dean of the North-Western College of Pharmacy.

A. L. LOOMIS, M. D., Professor in Medical Department of University of New York, says: "I prescribe Bush's Fluid Food or BOVININE, and prefer it to similar preparations."

J. S. JEWELL, M. D., Chicago, says of Bovinine: "I am delighted with it; it is what I have been looking for these twenty years, and it supplies a want that nothing else has been able to fill."

DRS. WARD and FRED. SMITH, speaking for themselves and their colleagues of the Hospital of St. Barnabas, Newark, say: "Bovinine was readily taken by the patients, was easily retained, and in many cases by stomachs which had rejected all other forms of nourishment. We believe Bovinine contains more nutriment, relative to the bulk, than any other preparation known to the medical profession."

"During the last four months of his sickness, the principal food of my father, General Grant, was Bovinine and Milk; and it was the use of this incomparable food alone that enabled him to finish the second volume of his personal memoirs.—FRED. D. GRANT."

October 1st, 1885.

Carefully prepared from the formula of the late James P. Bush, by the J. P. Bush Manufacturing Co., 44 Third Avenue, Chicago, Ill.

PUT UP IN 6 AND 12 OUNCE SIZES, AT 60c. AND $1.00 PER BOTTLE.

For Sale by all Druggists.

Principal Office, 2 BARCLAY STREET, NEW YORK CITY.

KEITH'S

CON. TINC. AVENA SATIVA

(From Common Oats.)

Without Admixture of any Kind.

A Powerful Nerve Stimulant, Tonic, Etc.,

Was first offered to the medical profession by B. Keith & Co., in 1881, as a remedy to be employed in the treatment of

Paralysis, Epilepsy, St. Vitus' Dance, the Morphia or Opium Habit, Chloral and Tobacco Habits, Sleeplessness, Nervous Debility and Exhaustion, Neuralgia, Alcoholism Painful and Deficient Menstruation, Headache, Hysteria, Impotency, Convulsions and Prostration from fainting, and in the Convalescent stage of all Acute Diseases.

Dose.—From ten to thirty drops, or more, as often as may be indicated to meet the urgency of the case. Administer in hot water when quick action is desired.

An Overdose Causes Pain at Base of Brain.

—)WE MAKE ONE QUALITY ONLY(—

Price,

3 oz., 45c.; 4 oz., 75c.; 8 oz., $1.35; 16 oz., $2.50

B. KEITH & CO.,

75 William Street, N. Y.

"ROYAL" SALAD DRESSING,

PURE AND WHOLESOME.

Always Fresh, does not turn Oily or Rancid.

"ROYAL" WORCESTERSHIRE SAUCE,

The Peer of American Manufacture.

PURITY. EXCELLENCE.

"CROWN" CELERY SPICES, TOMATO CATSUPS.

Pure Flavoring Extracts, Etc.

HORTON, CATO & CO.,

SOLE PROPRIETORS & MANUFACTURERS,

DETROIT, MICH.

A RICH PRESENT FOR YOU! We have purchased for one-fourth the original actual cost, a large quantity of elegant Papeteries, each one filled with the very choicest quality of Fashionable Linen Note Paper and Envelopes, in beautiful assorted tints, with pens, penholder, sealing wax, etc., to match. The regular retail price of some of these Papeteries is $3.00, others are worth $1.50 to $2.50 each, while the cheapest one has never been sold at less than 60 cents, and a great bargain at that price. They are all very handsome and really valuable. We shall, for the next two months, send one of these Papeteries, carefully packed and fully post-paid, to every one who sends us ONLY ONE DOLLAR to pay for a full year's subscription to DRAKE'S MAGAZINE. The best Papeteries will be sent to those who subscribe first, and it will be "First come best served." All subscriptions will begin with the latest number out. DRAKE'S MAGAZINE is 64 pages and handsomely bound, each number is complete in itself, and has from 15 to 25 handsome illustrations. It has special departments to interest ladies and children, and entertaining matter for everyone. Every article in it is written expressly for it by the best authors. No other magazine of equal value is sold at less than 20 cents per copy, or $2.00 per year, yet we will send you DRAKE'S MAGAZINE a whole year and a BEAUTIFUL PAPETERIE filled with fashionable Stationery, all for One Dollar. A one dollar bill will go safely in the mails. Cut this advertisement out. It may not appear again. Address, DRAKE'S MAGAZINE.

31 Mercantile Exchange, New York City.

MALTED MILK

THE ONLY FOOD

For Infants and Invalids

THAT CONTAINS ALL THE ELEMENTS OF NUTRITION, WITHOUT A SINGLE ADDITION.

MALTED MILK does not have to be cooked.

MALTED MILK needs no addition of milk, only to be stirred up with water, which can be done without the slightest fuss or trouble.

MALTED MILK will not spoil in hot weather.

MALTED MILK is always ready for immediate use night or day, when traveling or at home.

MALTED MILK does away with the danger of using sour or impure milk.

MALTED MILK is free from starch and cane sugar All foods that have to be cooked contain starch.

Ask your physician his opinion of MALTED MILK; he knows all about it.

Price, . . . 50 Cts. | Large Size, . $1.00

Extra Large Glass Jars for hospital and family use, ... $3.75

These contain five times the quantity of the $1.00 bottles.

A sample bottle will be sent free to any Mother or Invalid sending their address to

MALTED MILK CO.

RACINE, WISCONSIN, U. S. A.

ON THE USE OF PURGATIVES.

BY CHARLES A. HOFF, M. D., ST. LOUIS, MO.

Of all preparations contained within the *pharmacopœia,* there are none, apparently, held in higher esteem by mankind than that class of medicines, commonly known as purgatives. The busy practitioner confidently prescribes them with variable frequency, singly and combined, from the date of the writing of his very first prescription to that of his last; and the corner druggist rarely sees a day pass over his head on which he does not greet the customer who has called around to get "something to act upon his bowels." Indeed, the inevitable purgative awaits the tiny baby screaming in its first attack of colic; it is resorted to by the invalid weighted down with years of suffering and disease; and it is by no means despised by the individual in robust health, when assailed by the various petty ills, which even the most vigorous seldom entirely escape.

Notwithstanding the fact that purgatives are so generally prescribed by the physician, and so frequently resorted to without advice by the patient, they are not altogether incapable of doing harm. As everybody knows, the habit of purging the system repeatedly with salines, cholagogues, hydragogues, or drastics, is a most pernicious one; and the physician who fails to exercise a proper care, both in the selection and the administration of cathartics will sooner or later bankrupt the health of his patients as well as his own hard earned reputation.

Constipation is a complication of so many disorders, a symptom of so many diseases that its treatment in different cases depends upon very different considerations. For a simple, ordinary attack, the average doctor has been accustomed to use a simple purge, such as castor oil, sulphate of magnesia, rhubarb, senna, aloes, colocynth, blue pills, etc.; yet in none of these, can it be truly said, has there been found all that could be wished for, even in so simple a matter as a laxative. Where can we find the physician who has not been vexed and annoyed at the complaints of his patients against the purgative medicines he has been accustomed to prescribe. Some people there are who can not or will not swallow pills; many object to the nauseating castor oil; not a few oppose the use of salines since they are disagreeable both in taste and effect; many look upon all resinous cathartics as objectionable on account of their so called heating properties; aloes is objected to in pills and especially in pregnancy; elaterium is said to be excessively harsh and severe, croton oil is known to be dangerous; podophyllin causes an undue amount of griping; blue mass is avoided on general principles; and so on to the end of the chapter.

Fortunately, however, the physician of the present need no longer be placed in a dilemma when called upon to prescribe a preparation free from the faults enumerated in connection with ordinary purgatives. The pharmacist has bravely come to his aid with a formula of incomparable excellence; and this preparation, a combination of "manna, purified cathartic acid and fruit juice," although but recently brought to the notice of the medical world, is, nevertheless, already regarded as a most valuable addition to the resources of medicine.

The happy thought that suggested the combination known as the Rio Chemical Co.'s Acid Mannate justly challenges unlimited admiration and esteem, and has thus far evoked from the profession an almost universal verdict of commendation and praise. Prompt, mild and certain in its action, Acid Mannate may well be considered an ideal remedy in the constipation of pregnancy. Being pleasant to the taste, and continuing its good work without increased dosage, it is pre-eminently adapted to cases of habitual constipation. Indeed, in its wide range of adaptability as an aperient medicine it is impossible to exaggerate its importance, or allude either directly or indirectly to the vast variety of its beneficial, therapeutical properties.

The importance of laxatives is probably nowhere appreciated so much as in the constipation of pregnancy; and it is to this fact, no doubt, more than to any other, that Acid Mannate owes its great popularity and fame among remedial agents. The testimony of thousands of honorable medical gentlemen leading us to believe that, through the beneficent effect of this same elegant formula, constipation need not hereafter, as in the past, be regarded as one of the most troublesome attendants upon gestation. Moreover, the atrocious female pill of unknown composition but of dire effect, which has deluged the drug market for ages, we may consider as having had its day; and it is to be hoped that, since the physician is now in possession of a purgative especially suited to the period of gestation, female life will be less frequently harassed by the ails and aches said to be peculiar to the sex; and that miscarriages, displacements, granular erosions, congestions, headaches, dyspeptic and hypochondriacal attacks, and the whole long train of aches, pains and nervous ills will grow less familiar to the medical profession in the same ratio that the physician increases his familiarity with the actions of Acid Mannate.

A full sized bottle of Acid Mannate will be sent free to any Physician who desires to test it, if he will pay the express charges and mention this Journal, on application to the

Rio Chemical Co.,
St. Louis, Mo

THE TORSION

Braided Wire Mattress.

At all times a thoroughly ventilated and perfectly clean mattress, it cannot absorb odors, or retain exhalations or disease germs.

D. HAYES AGNEW, M. D., Prof. of Surgery, University of Pennsylvania, says:

"The Torsion Braided Wire Pillow and Mattress I regard as superior to anything of the kind now in use; well suited for either private or hospital use.

Prof. WM. H. PANCOAST, late Professor of Anatomy, etc., in Jefferson Medical College, now Professor of Anatomy and Clinical Surgery in the Medico-Chirurgical College of Philadelphia Hospital Surgeons, says:

"I have used in my surgical practice your Braided Wire, in the form of mattresses, pillows for the head and body, and short pillows for the arm and leg when injured. I find them most admirable, cool and light, yet affording perfect and elastic support.
I have saved a patient from bed sores by the use of the Braided Wire mattress."

WM. H. FORD, President Board of Health, Philadelphia, says:

"I have used the Torsion Braided Wire Mattress with great satisfaction, it is light and therefore easily handled; it is elastic and very comfortable. The case can be easily removed to afford a complete airing, a feature of great importance from a health point of view.
It is an invention of great usefulness.

For descriptive circular and price list, send to

The Torsion Braided Wire Upholstering Company,

1017 CHESTNUT ST., PHILA.

"BILLET"

are

Carefully Selected

French Sardines,

Packed in Choicest Olive Oil.

AT ALL LEADING GROCERS.

Any Retail Druggist in the United States who desires to obtain Advertising Matter, Show Cards, Signs, etc., which will assist and instruct him in the sale of Harriet Hubbard Ayer's Recamier Toilet Preparations and Vita Nuova, should address THE RECAMIER MFG. CO., 52 and 54 Park Place, New York City.

Subscriptions $1 per year. Now is the time to subscribe.

UNEQUALLED Ask your Grocer for, and insist on having, **LEA & PERRINS'** Sauce, "The Worcestershire." It is known throughout the whole civilized world as the Best and most Delicious Sauce. **DELICIOUS.**

SCOTCH MARMALADE, Jams, Fruit and Wine, Jellies, &c.
By James Keiller & Son, Dundee.

SCOTCH BISCUITS, Albert, Water, and Oat Cake,
By Robert Middlemass & Son, Edinburgh.

RACAHOUT des Arabes, by De Langrenier, Paris.

BAY WATER, West India, (J. D. S. brand), in cases, one dozen bottles.
Sold by all first-class Grocers.

JOHN DUNCANS' SONS, 43 Park Place, New York. Agents for the United States.

Robert Gordon's
TRADE MARK.

SPICED · SEA · FOODS

(IN GLASS.)

OYSTERS, LITTLE NECK CLAMS, MUSSELL, SHRIMP, LOBSTER, Etc.,

Packed in 8 and 16 oz. Jars. Guaranteed to be strictly Pure.

MADE OF THE FINEST MATERIALS.

—ALSO,—

ROBERT GORDON'S CONDENSED CLAM CHOWDER,
In 3-lb Cans. Cheapest and Best in the Market.

MANUFACTURED BY

JONES, GORDON COMPANY, Limited,
204 West Street, New York.

A GOOD INCOME.

We have enabled several gentlemen and ladies to add largely to their incomes by paying them liberal commissions on subscriptions.

For further particulars, ADDRESS AMERICAN ANALYST,
19 Park Place, New York.

ESTABLISHED 1857.

J. H. CUTTER,

OLD

BOURBON AND RYE WHISKIES.

We are the Sole Owners and Proprietors of this Celebrated Brand of Whiskey.

C.P.MOORMAN & CO. **LOUISVILLE, KY.**

We Guarantee the Superior Quality and Absolute Purity of every Barrel of Whiskey sold by us under this Brand.

W. P. FESSENDEN, Agent for N. E. States, Maryland and Penn., 11 Central St., Boston.

Good Subscription Agents wanted by AMERICAN ANALYST.

J. HENRY HENTZ. J. P. ROBINETT. J. HENRY HENTZ, Jr.

ESTABLISHED 1793.

WHITE, HENTZ & CO.,

SOLE PROPRIETORS OF

Trimble and Pennsylvania Monogram Whiskies.

222 and 224 NORTH SECOND ST., PHILADELPHIA.

D. LIEBER, 17 South William St., New York. Col. H. A. SELIGSON, 1200 Pennsylvania Ave., Washington, D. C.

POLICE DEPARTMENT,

CITY OF NEW YORK.

MESSRS. ADAMS & SONS:

It gives me pleasure to add my testimonial, in behalf of your "TUTTI FRUTTI" CHEWING GUM, to your collection.

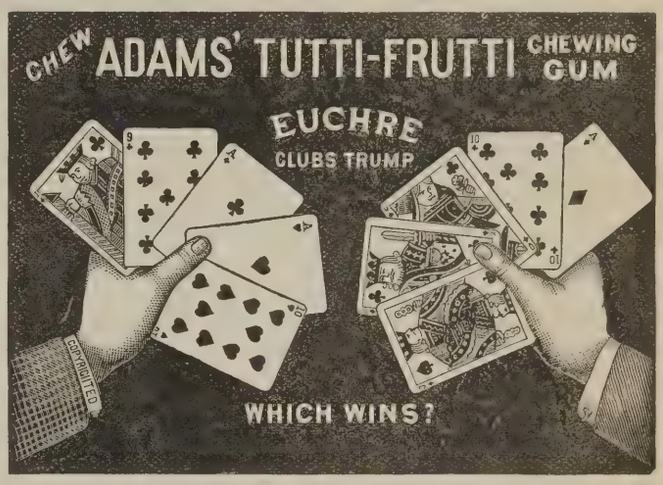
Superintendent Murray and myself were *recommended by Dr. CYRUS EDSON to try your Gum for a form of indigestion* from which we were suffering. At first it seemed to us a ridiculous remedy, but I am happy to say that its effects thoroughly justified the Doctor's recommendation.

I would add that I have rarely taken a more pleasant medicine.

Yours, very truly,

HENRY V. STEERS,

Inspector of Police.



GOLD You can live at home and make more money at work for us than at anything else in the world. Either sex; all ages. Costly outfit FREE. Terms FREE. Address, TRUE & Co., Augusta, Maine.

TO ADVERTISERS!

FOR a check for $20 we will print a ten-line advertisement in One Million issues of leading American Newspapers and complete the work within ten days. This is at the rate of only one-fifth of a cent a line, for 1,000 Circulation! The advertisement will appear in but a single issue of any paper, and consequently will be placed before One Million different newspaper purchasers; or FIVE MILLION READERS, if it is true, as is sometimes stated, that every newspaper is looked at by five persons on an average. Ten lines will accommodate about 75 words. Address with copy of Adv. and check, or send 30 cents for Book of 256 pages.
GEO. P. ROWELL & CO., 10 SPRUCE ST., NEW YORK.

We have just issued a new edition of our Book called "Newspaper Advertising." It has 256 pages, and among its contents may be named the following Lists and Catalogues of Newspapers:—
DAILY NEWSPAPERS IN NEW YORK CITY, with their Advertising Rates.
DAILY NEWSPAPERS IN CITIES HAVING more than 150,000 population, omitting all but the best.
DAILY NEWSPAPERS IN CITIES HAVING more than 20,000 population, omitting all but the best.
A SMALL LIST OF NEWSPAPERS IN which to advertise every section of the country: being a choice selection made up with great care, guided by long experience.
ONE NEWSPAPER IN A STATE. The best one for an advertiser to use if he will use but one.
BARGAINS IN ADVERTISING IN DAILY Newspapers in many principal cities and towns, a List which offers peculiar inducements to some advertisers.
LARGEST CIRCULATIONS. A complete list of all American papers issuing regularly more than 25,000 copies.
THE BEST LIST OF LOCAL NEWSPAPERS, covering every town of over 5,000 population and every important county seat.
SELECT LIST OF LOCAL NEWSPAPERS, in which advertisements are inserted at half price.
5,472 VILLAGE NEWSPAPERS, in which advertisements are inserted for $42.15 a line and appear in the whole lot—one-half of all the American Weeklies
Book sent to any address for THIRTY CENTS.

THE FINEST MADE
COLBURN'S
PHILADELPHIA
MUSTARD
KING OF CONDIMENTS

WE solicit an investigation of our system and methods, and will gladly send to any one very interesting matter on the OPIUM HABIT, DRUNKENNESS and their effects and cure. Physicians specially invited to examine, and if desirous of trying our remedies, liberal arrangements will be made with them. Prompt and frank attention to correspondence. The remedies are put up safely in stout boxes and sent masked. Full directions sent.

THE LESLIE E. KEELEY CO., Dwight, Illinois.

ESTERBROOK'S STEEL PENS

Leading Numbers 

14,048,128 130, 135, 333, 161.

—For sale by all stationers.—

THE ESTERBROOK STEEL PEN CO., 26 John St., N. Y.
WORKS · CAMDEN, N. J.



These Goods are "Par Excellence,"

Pure, Healthful and Reliable, warranted to give satisfaction in every particular. For sale by wholesale and retail grocers throughout the United States. VOUWIE BROS., Manufacturers, CLEVELAND and CHICAGO.

A BUSINESS BENEFIT.

ADVANTAGES TO ADVERTISERS OFFERED BY THE AMERICAN ANALYST.

It has not the limitations of a daily paper. No one reads yesterday's paper. A monthly lives at least a month, while a semi-monthly is fresh twice a month, and its audience is not limited by geographical lines, but the circulation is all over the United States and Canada.

It contains matters of interest to everyone, especially the ladies of the household, and is, therefore, sure of a careful perusal. Our audiences are intelligent and of the better classes, who have money to spend, and any well worded advertisement in our columns, giving real information, will receive a careful perusal..

Our rates are as low as our circulation affords. Large circulation and original matter cost money, and those advertisers who desire to realize these benefits must expect to pay reasonably for them.

Advertisements in our columns are permanent. Most of our subscribers bind their numbers.

Our advertisements are set up in an attractive form, sure to call the attention of the reader.

Anything that our readers want, or for which a demand is to be created, not wholly of a local nature, will pay to advertise with us.

We take only advertisements from legitimate houses of really meritorious goods, and give them all the editorial assistance they deserve; consequently our readers knowing this, have confidence in advertisements contained in our columns.

The fact that we have the best and largest houses in every branch of trade advertising with us, and that they always renew as their seasons arrive, proves beyond a doubt that they have found the AMERICAN ANALYST a good advertising medium. Why should not you?

PEACOCK'S BROMIDES

(SYR: BROM: COMP: PEACOCK)

NERVE SEDATIVE.

Each fluid drachm represents 15 grains of the Combined C. P. Bromides of Potassium, Sodium, Calcium, Ammonium and Lithium.

USES:—EPILEPSY, and all CONGESTIVE, CONVULSIVE, and REFLEX NEUROSES.

This preparation has stood the test of time and experience, and can be relied upon to produce results, which can not be obtained from the use of commercial bromide substitutes.

DOSE:—One to two FLUID drachms, in WATER, three or more times a day.

PEACOCK CHEMICAL CO., St. Louis.

CARL L. JENSEN'S
CRYSTAL PEPSIN TABLETS



FOR DYSPEPSIA OR INDIGESTION.

CARL L. JENSEN'S CRYSTAL PEPSIN has been known throughout the world for the last ten years among the medical profession only. But a medical preparation of such high value as this could not be kept exclusively within the power of the physicians without permitting the public to become familiar with CARL L. JENSEN'S CRYSTAL PEPSIN, which they have so often seen mentioned in prescriptions from their physicians, and from which preparations they have received such gratifying results. That the public have availed themselves of this knowledge is manifested from the fact that the demand at the drug stores of late for CARL L. JENSEN'S CRYSTAL PEPSIN has become so urgent that we have been repeatedly requested by the Druggists at large to put up the PEPSIN in a more convenient form for their customers who demand JENSEN'S CRYSTAL PEPSIN without bringing a prescription. This PEPSIN, to suit the prescription department, is put up in loose Crystals or Scales, and therefore not in a suitable manner to be handled by the public. It is therefore, for the convenience of the public, prepared in tablet form, of which one or two constitute a dose, and put up in small bottles of convenient form to be carried in the pocket, each bottle containing seventy-five tablets.

CARL L. JENSEN,
SOLE MANUFACTURER,
2039 Green Street, Philadelphia, and 161 West 23d Street, New York.
KEPT BY ALL DRUGGISTS.

ESTABLISHED 1841.

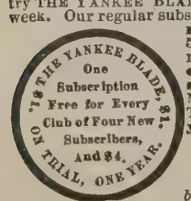


THE GREAT AMERICAN STORY PAPER,
—THE—
---YANKEE BLADE---

This wonderful family story paper is read every week by 400,000 people. It is a large, eight-page paper, every page filled solid full of interesting reading; stories of thrilling interest, adventure, love, the sea, detective tales, fireside stories, etc. Special articles on the Household Department, Ladies' Work, Boys' and Girls' Departments. The Famous Funny Columns of THE YANKEE BLADE are edited by SAM WALTER FOSS, the celebrated humorist. The circulation is rapidly increasing. Endorsed by the best people as suitable for everybody to read. Its reading matter is pure, and devoid of the slightest tinge of vulgarity. Don't fail to try THE YANKEE BLADE. You will be delighted with it. Comes every week. Our regular subscription price is $2.00 per year. **We offer it to new subscribers for only $1.00 a year, or 50 cents for six months.** We will send it three months for 25 cents. **If you will enclose 6 cts. extra, and mention this paper, we will send you FREE a Half Dozen Japanese Shilu Handkerchiefs** of Mikado paper, fibre silk, nearly half a yard square, in handsome designs, assorted. This is one of the greatest offers ever made by any reliable firm. Send at once. **Sent 2 years for $1.75.** THE YANKEE BLADE is for sale at all newsdealers, for 5c. per copy.



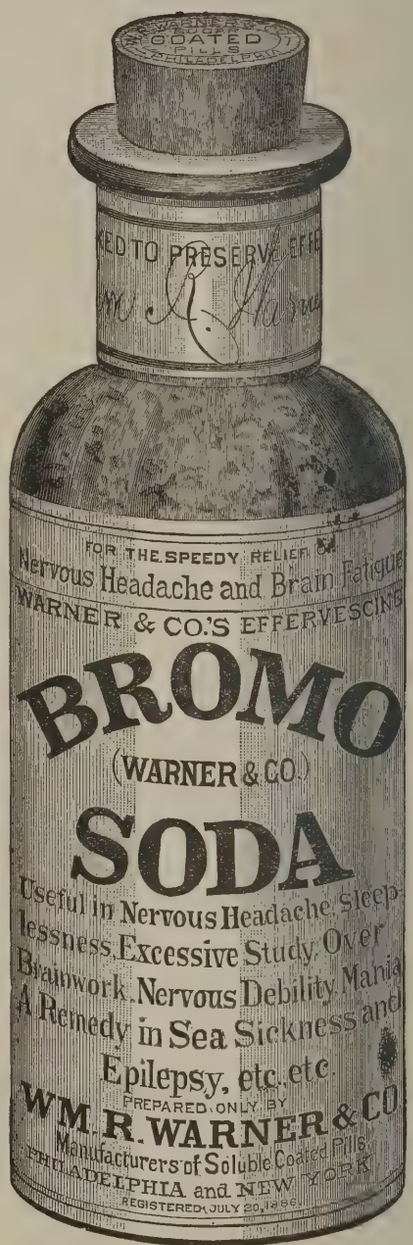
FREE TO SUBSCRIBERS.



POTTER & POTTER, Pubs. Yankee Blade, Boston, Mass.

We have examined the above-named paper and Japanese handkerchiefs, and find them to be a remarkable bargain. We can recommend them to all our readers.—Editor.

A DOSE OR TWO
WILL QUICKLY CURE
NERVOUS HEADACHE.



A Cure for Sick Headache.

A CURE FOR

SLEEPLESSNESS.

A CURE FOR

SEA-SICKNESS.

OUR SPECIALTIES ARE

Choice Bottled Ciders

—AND—

Pure Cider Vinegar,

For Hotel and First-Class Trade.

T. P. ROGERS & SON,

370 to 376 Washington Street,

NEW YORK.

Good Agents

To obtain Subscriptions for

AMERICAN * ANALYST

WANTED ON LIBERAL TERMS.

Natural Lithia Water.

FARMVILLE LITHIA WATER

FROM VIRGINIA.

—*Not only Relieves, but*—

CURES

Bright's Disease, Kidney Troubles of all Kinds, Rheumatism, Rheumatic Gout, Dyspepsia, Bladder Troubles, Diabetes, Calculi, Albuminuria. Without Taste or Odor. An Unapproachable Record in Results.

Sold by HAZARD, HAZARD & Co., Fifth Avenue Hotel, and other first-class Pharmacists. Pamphlet free upon application.

FARMVILLE LITHIA SPRINGS CO.,

Broadway, New York, and Philadelphia.

Subscriptions $1 per year. Now is the time to subscribe.

CALIFORNIA

Fine Table Wines

From our Celebrated Orleans Vineyard.

Arpad Haraszthy & Co.

Producers of the

ECLIPSE

CHAMPAGNE,

530 Washington St.

SAN FRANCISCO.

PARK & TILFORD. New York, } Agents.
C. JEVNE & CO., - - Chicago, }



FACIAL BLEMISHES.

the Largest Establishment in the World for their Treatment. Facial Development, Hair and Scalp, Superfluous Hair, Birth Marks, Moles, Warts, Moth, Freckles, Wrinkles, Red Nose, Acne, Pimples, Bl'k Heads, Scars, Pitting, etc., and their treatment. Send 10c. for book of 50 pages, 4th edition.

Dr. JOHN H. WOODBURY,
37 North Pearl St., Albany, N. Y.
Established 1870. Inventor of Facial Appliances, Springs, etc. Six Parlors.

PURITY AGE STRENGTH

TRADE MARK.

The "Best" Tonic

A CONCENTRATED LIQUID EXTRACT OF

MALT AND HOPS.

Aids Digestion. Cures Dyspepsia.

Strengthens the System.

Restores Sound, Refreshing Sleep.

Priceless to Nursing Mothers.

Manufactured by SPECIALTY DEPARTMENT,

PHIL. BEST BREWING CO.

Eastern Depot, 28 College Place, New York.

Recommended by Eminent Physicians.

FOR SALE BY ALL DRUGGISTS

NATRONA BI-CARBONATE OF SODA.

(ABSOLUTELY PURE.)

NATRONA



TRADE MARK

SODA

The nature of the raw material from which NATRONA BI-CARBONATE OF SODA is made—viz., kryolith, a mineral containing *pure sodium*—insures a purity and uniformity of product which cannot be obtained from any other known material. In making BI-CARB. SODA from any other raw material, the use of sulphuric acid is a necessity, but none is used in any part of the process of making NATRONA BI-CARB.; hence its entire freedom from the slightest trace of arsenic, which is always present in ordinary soda. Its absolute purity and entire freedom from all traces of *sulphate of soda*, common salt and other impurities, render NATRONA BI-CARB. NEARLY TASTELESS, and being bolted through the finest bolting-cloth, insures the finest stage of division.

To these indisputable facts the attention of CONSUMERS of soda is specially called. They are IMPORTANT, and should influence both those who use and those who sell soda, to buy and sell NONE BUT THE BEST.

The NATRONA BI-CARB. Soda is kept in stock by almost every wholesale druggist and grocer throughout the United States, of whom it may be ordered.

Natrona Bi-Carb. Soda is unequaled by any other brand of English or American Manufacture.

PENNA. SALT MANUFACTURING CO.,

NATRONA CHEMICAL WORKS. PHILADELPHIA, PA.

ARMOUR & CO.

CHICAGO, ILLS.

PACKERS OF

Pork and Beef Products

CANNED MEATS,

ETC.,

FOR HOME CONSUMPTION AND FOR EXPORT

TO ALL PARTS OF THE WORLD.

Also,

SHIPPERS OF

Choice Dressed Beef,

MUTTON AND HOGS,

In Refrigerator Cars,

To BOSTON,

NEW YORK,

PHILADELPHIA,

BALTIMORE,

And other cities throughout the country.

CARNRICK'S SOLUBLE FOOD

FOR INFANTS AND CHILDREN.

For Mothers, Invalids, Dyspeptics & Aged People.



THE ONLY FOOD *that digests as easily as human milk, and agrees with all infants and children.*

THE ONLY FOOD *that thoroughly nourishes the child without the addition of cow's milk.*

THE ONLY FOOD *that removes from infancy all necessity, danger and annoyance of a wet nurse.*

TAKEN BY MOTHERS *once or twice a day the quantity of milk will be increased and quality at once improved.*

IF THE CHILD IS RESTLESS, *change partially from nursing to* **SOLUBLE FOOD.**

DR. STUTZER, Food Analyst for Rhenish Prussia, says: "CARNRICK'S SOLUBLE FOOD is the best of all the foods I have ever examined."

"OUR BABY'S FIRST AND SECOND YEARS," by Marion Harland. Book of 64 pages, giving careful instructions for bringing up the little ones. Sent free by

REED & CARNRICK, N. Y.



GOLD MEDAL, PARIS, 18[illegible]

BAKER'S

Breakfast Cocoa.

Warranted *absolutely pure Cocoa,* from which the excess of Oil has been removed. It has *three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup.* It is delicious, nourishing, strengthening, easily digested, and admirably adapted for invalids as well as for persons in health.

Sold by Grocers everywhere.

W. BAKER & CO., Dorchester, Mass.

GILBERT S. GRAVES

STANDARD

STARCH.

MANUFACTURED WITH ENTIRELY NEW MACHINERY AND BY LATEST IMPROVED PROCESS.

IT IS GUARANTEED to be fully equal to BRANDS SOLD AT FANCY PRICES, and MUCH SUPERIOR TO STARCH SOLD AT EQUAL PRICES.

THE MIRROR GLOSS

Is the finest Starch made for the Laundry, and cannot be excelled. It will not injure the finest Laces.

THE CORN STARCH

For culinary purposes is prepared with the greatest care, from selected Corn, and is a most delicious and wholesome article of food.

ASK YOUR GROCER FOR IT.

THURSTON'S IVORY PEARL TOOTH POWDER

WILL KEEP THE TEETH IN PERFECT CONDITION AND THE GUMS HEALTHY.

Price 25 & 50 Cents PER BOTTLE.

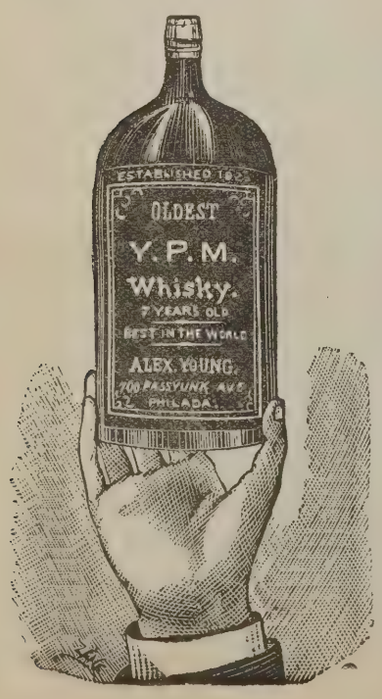
ROBINSON'S SURE CURE FOR

RHEUMATISM

And NEURALGIA,

And remedy for diseases arising from an impure state of the blood. An antidote for **MALARIA.** Price 50 c. and $1. Sent by mail on receipt of price. Send for Circular.

R. W. ROBINSON & SON,
184 Greenwich Street,
NEW YORK.



ESTABLISHED 1823.

ALEX. YOUNG CO., Limited

DISTILLERS OF

Y. P. M. WHISKIES

DISTILLERY,

Nos. 408, 410, 412 and 414 South Street,

MALT HOUSE,

416, 418, 420, 422 and 424 South Street,

STORE,

No. 700 Passyunk Avenue.

PHILADELPHIA, PA.

SWIFT'S

Choice Chicago Dressed Beef

—AND—

MUTTON.

CAN be found at all times in full supply and at popular prices at the branch houses in all the larger cities and is ***retailed by all first class butchers.***

The trade of all marketmen and meat dealers is solicited for our Wholesale Branch Houses, and the ***public may rest assured*** *that in* ***purchasing our meat*** *from dealers they will* ***always receive the best.***

SWIFT AND COMPANY,

UNION STOCK YARDS,

CHICAGO, ILLS.

Tabasco Pepper Sauce

OR LIQUID PEPPER.

Is simply the Pulp of the Ripe Pepper Extracted by Pressure.

The seed of this Pepper was obtained from Central America, and by careful cultivation in Louisiana for many years has been so improved in strength, flavor and aroma, as to have become a new variety of Red Pepper, superior to all others. The pulp is so handled as to retain all the flavor, strength, aroma and color of the ripe fruit, and to keep unimpaired in any climate. It excites the appetite, promotes digestion, and is pronounced, by connoisseurs, to be the finest condiment in the world. For medicinal purposes it recommends itself by its purity, strength and diffusible form.

Manufactured by E. McILHENNY,

NEW IBERIA, LA.

For Sale by all Wholesale Grocers.

CARNRICK'S SOLUBLE FOOD

IS UNLIKE ANY OTHER INFANT'S FOOD THAT HAS EVER BEEN PRODUCED.

℞

THE FORMULA.

Partially Predigested Milk Solids,	**45 parts.**
Wheat with the Starch converted into Dextrin,	**45 "**
Milk Sugar,	**10 "**

We do not claim this food to be "a **perfect** substitute for human milk." But we do claim that **Carnrick's Food approaches nearer to human milk in constituents and digestibility than any other food that has ever been produced**, and that it is the only infant's food that will, without the addition of cow's milk, thoroughly nurse a child from its birth.

We believe that **Carnrick's Food** solves the problem of a reliable substitute for human milk. The Caseine of cows' milk, by partial predigestion with freshly made Pancreatine, is rendered as easily digestible by the infant as human milk.

We have never published an analysis of **Carnrick's Food** "prepared with milk," for, unlike all other foods, it is prepared by the addition of water only, and we base our claim upon the intrinsic value of the food as compared with an equal amount of solid constituents of human milk. All other analyses or comparisons are misleading. We challenge similar comparisons with any other food, and confidently believe, that if **Carnrick's Food** is depended upon for the nutrition of infants, the great mortality among children will be reduced. Full information regarding the process of manufacture will be cheerfully furnished, and samples sent free to those who wish to test **Carnrick's Food.**

REED & CARNRICK, New York.

GORDON & DILWORTH

MANUFACTURING PURVEYORS

Established 1847

ALIMENTARY PRODUCTS

ALL OF OUR PRODUCTIONS BEAR THIS TRADE MARK

WE WILL PROSECUTE ALL INFRINGEMENTS & IMITATIONS







CHOICE DESSERTS

OVER 100 DOMESTIC & FOREIGN FRUITS AND VEGETABLES TRANSMUTED INTO TABLE DELICACIES

PRICES ON PRESERVED FRUITS REDUCED 1ST DEC. 1885

PRESERVED · CANNED & BRANDY FRUITS · FRUIT JELLIES · VEGETABLES · TOMATO CATSUP · SYRUPS & JAMS · SALAD DRESSING · BLACKBERRY BRANDY · MINCE MEAT · PLUM PUDDING · SWEET PICKLES · OLIVES & CAPERS · WINE JELLIES · MARMALADE · SOUPS SAUCES &c.

SOLD BY THE LEADING GROCERS ON THE AMERICAN CONTINENT.

GRAND NATIONAL PRIZE OF 16,600 FRANCS.

QUINA-LAROCHE

VINOUS ELIXIR,

A STIMULATING RESTORATIVE

AND

ANTI-FEBRILE TONIC.

This meritorious ELIXIR, QUINA-LAROCHE, is prepared from the **three** Cinchonas; it is an agreeable and doubtless highly efficacious remedy.—*The Lancet.*

QUINA-LAROCHE, under the form of a vinous Elixir, contains the totality of the numerous principles of the **three** Cinchona barks. It is a preparation which renders great services to Therapeutics.—Extract of the *Gazette des Hôpitaux*, Paris.

Far superior to all Ordinary Cinchona Wines.

LAROCHE'S QUINA, tried by the Academy of Medicine of Paris, is a specially prepared Compound Extract of Quinquina, a careful analysis, confirmed by experience, has shown that most of the wines and syrups hitherto used have not contained all the properties of this precious bark, of these some, although beneficial, are altogether lost, while many preparations contain but half the properties of the bark in varying proportions.

Mr. Laroche, by his peculiar method, has succeeded in extracting all the active principles of the quinquina, combining these with *Catalan Wine*, forming an Elixir free from the disagreeable bitterness of other similar preparations. Practitioners have found triple advantages in the use of this Elixir; it is a *strong tonic*, is easily administered, and perfectly harmless, being free from the unpleasant effects of Quinine.

THE FERRUGINOUS QUINA-LAROCHE is the invigorating tonic *par excellence*, having the advantage of being easily assimilated by the gastric juice, without, in any way, deranging the action of the digestive organs, proving itself to be a most efficacious remedy in cases of impoverishment of the blood, **Anæmia, Chlorosis, Intestinal Hemorrhage, Castralgia, Exhaustion,** etc., etc.

PARIS.—22 RUE DROUOT.—PARIS.

J. Laroche

E. FOUGERA & CO., New York, Sole Agents for the United States.

D. G. Cook, Pres.

AMERICAN WINE CO.,

ST. LOUIS.

COOK'S IMPERIAL

Press House and Wine Cellars, SANDUSKY, OHIO.



Office and Salesroom, Wine House and Vaults, 3015 TO 3021 CASS AVE.

Pure Still Wines.

GREENWAY'S PORTER

—AND—

DOUBLE AND EXTRA DOUBLE STOUT.

GREENWAY'S SALE INDIA PALE

IN GLASS OR WOOD.

ENGLISH TRADE MARK.

FULLY EQUAL TO THE BEST IMPORTED. FOR FAMILY OR CLUB USE. RECOMMENDED BY OUR BEST PHYSICIANS FOR SALE BY ALL FIRST CLASS GROCERS AND DEALERS.

SEND FOR CIRCULARS.

THE GREENWAY BREWING CO.

SYRACUSE, N.Y.

Greenway Bottling Co.,

BOTTLERS OF

GREENWAY BREWING CO'S BRANDS OF ALE, PORTER, DOUBLE STOUT

—AND—

Germania Brewing Co's Standard Pale Crown Lager & Culmbacher.

N. Y. Depot, 31 Broadway.

ESTABLISHED IN LONDON 1831.



W. G. DEAN & SON,

—MANUFACTURERS OF—

PASTE AND STICK

LICORICE

PURE CALABRIA, Equal to the Imported

Try our SICILY (brand select).

BEST IN THE MARKET.

Also LICORICE TABLETS.

361 & 363 Washington Street,

And 84, 86 & 88 North Moore St.,

W. G. DEAN, HARRY W. DEAN. } NEW YORK

—THE—

CHRISTIAN MOERLEIN

Brewing Co.,

CINCINNATI, U. S. A.,

Brewers of the far-famed

"NATIONAL" EXPORT

(The Queen of Beers)

LAGER.

Owing to its absolute purity, beautiful pale color, fine aroma and nutritious qualities, the above beer has become the PRIME FAVORITE in all the principal hotels and clubs, and in thousands of families throughout the West and South.

Pure LAGER BEER,

"IMPERIAL" and "CULMBACHER"

Brewed & Bottled SPECIALLY FOR HOTELS, CLUBS AND PRIVATE FAMILIES

—BY—

Beadleston & Woerz

291 W. 10th St. New York.

Orders by Postal Card promptly attended to.

H. CLAUSEN & SON

BREWING CO'S

CHAMPAGNE LAGER BEER,

ROYAL EXPORT LAGER,

EAST INDIA PALE ALE,

EXTRA AMERICAN STOUT.

Bottled for Family Use and Export by

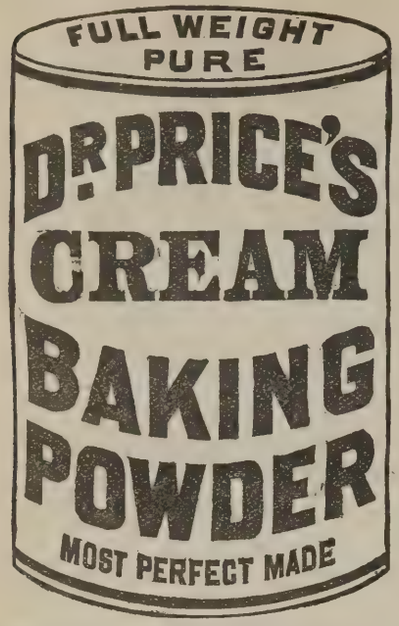
PHŒNIX BOTTLING CO.

888 and 890 Second Avenue,

Bet. 47th and 48th Streets.

NEW YORK.

Order from your Grocer, or direct from us.



Its superior excellence proven in millions of homes for more than a quarter of a century. It is used by the United States Government. Endorsed by the heads of the Great Universities as the Strongest, Purest, and most Healthful. Dr. Price's Cream Baking Powder does not contain Ammonia, Lime or Alum. Sold only in cans.

PRICE BAKING POWDER CO.
NEW YORK. CHICAGO, ST. LOUIS.

STERLING



BAKING POWDER

MADE FROM
99 50/100 PURE CREAM TARTAR.

This powder never varies. A marvel of purity, strength and wholesomeness. More economical than the ordinary kinds. SOLD ONLY IN CANS.

STERLING MANU'F'G CO.,
12 & 14 Spruce St., New York.

CLEVELAND'S

SUPERIOR

Baking Powder

Is made only of the purest grape cream of tartar, purest bicarbonate of soda, and a small portion of flour, and is warranted entirely free from alum, ammonia, the phosphates, terra alba, lime, and all the adulterants frequently found in ordinary baking powders. It always affords the most nutritious, the most healthful, and the most delicious food, and the purity of materials used in its manufacture, and the nicety of their combination, render it the strongest and most economical ever produced.

It is recommended for purity, efficiency and healthfulness by various state chemists, chemists of boards of health, and professors in institutions of learning throughout the country.

Sold only in tin cans.

CLEVELAND BROTHERS,
ALBANY, N. Y.

MANUFACTURED BY THE



N. K. FAIRBANK & CO'S

FAIRY SOAP.

A PERFECTLY PURE WHITE FLOATING SOAP.

DESIGNED EXPRESSLY TO USE IN TOILET, BATH AND NURSERY.

Admirably adapted to every requirement of the Household.

DAINTY AND DELICATE FOR ALL WASHING PURPOSES

For sale by all First-class Grocers and Druggists.

N. K. FAIRBANK & CO.,

CHICAGO, ST. LOUIS, NEW YORK, OMAHA.

ESTABLISHED 1872.

GELATINE.

JAMES CHALMER'S SON'S

Transparent Gelatine.

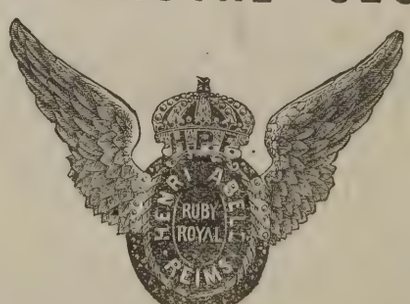
PURITY—STRENGTH.

Best for Family Use.
Jellies, Blanc Mange, Etc.

ACKNOWLEDGED BY EVERY ONE EQUAL TO THE BEST.



RUBY ROYAL "SEC."



This wine, of a bright crimson or Ruby color, possesses exceptional merit in all the characteristics of dryness, mellowness of flavor, and delicacy of fragrance. It is the only red champagne in the market, and can be tried at the Hoffman House, Delmonico's and other first-class places.

Sold by the Leading Grocers.

AGATE IRON WARE

Is the Purest, Cleanest, Most Durable, and altogether the Best Ware for family use ever made. It will not rust or break like ordinary Enamels, and is absolutely pure and safe to use, as certified to by the most eminent chemists here and abroad.



Two thousand different styles and sizes of Agate cooking utensils, for family use, are sold by all first-class dealers throughout the world, and giving universal satisfaction.

Subscriptions $1 per year. Now is the time to subscribe.

AMERICAN ANALYST

FOR THE

FAMILY AND CONSUMER.

A SEMI-MONTHLY ADVOCATE OF PURE FOOD AND THE SUPPRESSION OF ADULTERATION.

Office, 19 Park Place.

[Entered at the Post Office at New York, as Second Class Matter.]

VOL. IV.—No. 13. NEW YORK, JULY 1, 1888. Whole No. 85

CONTENTS.

Adulteration in Massachusetts 271
Answers to Correspondents 274
Beer 274
Business Notes 277
Cubebs 272
Domestic Dietetics 275
Fine Porcelain 273
Hirsute Electrolysis 276
Imitation a failure 272
Massachusetts Adulterations 271
Materialized Spectre 269
Porcelain 273
Which Beers to Drink and which to Avoid .. 274
Editorial 274
Poisonous Wall Paper and Carpets—What Chicago Packers Sell—Death of Dr. Jensen—A Just Verdict.

A MATERIALIZED SPECTRE.

Last summer I was living at the upper edge of Harlem. I always came down town in the morning by the elevated railroad, being usually in a hurry. In the evening, having more time to spare, I preferred going home by the boats that ran up the East and Harlem rivers. The air on the water was pleasant to me, and the kaleidoscope of the lighted river front continually presented new features of interest.

One evening when I was on the boat going up the East river I had a strange and startling experience.

Night had set in early, as the day had been dark, and the river front was not yet fully lighted. The boat was running pretty close to the New York shore, and I was at my usual place, on that side of the boat, on the lower deck, as near to the water as possible, leaning on the rail and gazing alternately at the water and at the docks.

It was when we were passing a pier a little way above Corlaer's Hook that my strange experience began.

The pier that I speak of was planked up at the sides and at the water end with upright planks, which were probably fastened to stringers across the piles. I had noticed that before, as I had noticed everything along the river, being a minute observer. At the time I speak of there was also a bright lantern light at the head of the pier, doubtless intended as a signal for some vessel that was expected to land there.

Suddenly, while I was gazing at the pier without being specially interested in it, a human face became visible in one of the planks near the middle, as if it was framed there.

It was a man's face, not at all good looking, with coarse and brutal features, and with wild and starting eyes. The light from above neither lighted it up nor cast it into the shade, but enabled it to be clearly seen from where I stood. I should add that the tide was then low, and that the spot at which the face was framed in the plank appeared to me to be a little below high water mark.

The vision—that was what I was compelled to call it—was so weird and unexpected that it startled me. Though not at all timid, I am a nervous person, and I confess that it upset me.

In another moment the boat passed beyond the pier, and I lost the view of that pallid and sinister face, but not by any means the remembrance of it.

I had been working very hard of late, compressing a good deal of my sort of labor into a few hours every day, and there had been more or less worry mixed with it, and the weather was very hot. It was natural, therefore, that I should believe that I was beginning to be ill, and that my illness afflicted me with the unpleasant faculty of seeing things that did not exist.

As there is not a particle of superstition in my nature, I told myself that I had been the victim of an optical illusion, and that there could not possibly have been any such face framed in the plank of the pier as that which I had supposed I saw.

That was also the opinion of my wife when I related my experience to her. Though I had reason to suspect that she took a more serious view of the vision than I did, she was of the opinion that I had been overworking myself during the hot weather, and that I needed rest and recreation. There was nothing for it, she said, so good as country air and an absence of work and business bother, and she was determined that I should have the air and the absence.

I left the matter in her hands, concerning myself only with arranging matters so that I could leave the city for a while, and the result of her machinations was that our little family was shipped off to a farm house back of the Catskills, where we could not even get the daily papers until they were so stale that I cared nothing for them.

It seems to me that I led there as easy and indolent a life, as far as business cares and worry were concerned, as a man could lead, and after a while the weird face which I had seen framed in the plank ceased to haunt my dreams. Then I considered myself cured.

We were in the country but two weeks, that being the limit of the absence I had allowed myself, and when we returned to town I resumed my former habit of taking the elevated road to business in the morning and a Harlem boat home in the evening.

It was on my second trip up the river by the boat that I had a recurrence of the vision which had so nervously troubled me.

I was on the lower deck again, standing at the forward guard rail, watching the always interesting panorama of the lighted river front, when the boat passed the same pier above Corlaer's Hook, and I noticed the same lantern hanging there.

Suddenly, directly under the lantern, and a little below high water mark, as I had previously judged, appeared the same weird, sinister, brutal, evil looking face which I had seen there before, pallid and corpse like, with wild and staring eyes, framed there in the plank as when it first confronted me.

I was so startled and shocked by this second vision that I staggered back from where I stood, and might have fallen if a deck hand had not caught me and held me up.

"What's the matter, boss?" he asked. "Are you sick."

"I'm afraid that something is the matter with me," I answered faintly. "Did you notice the pier we just passed?"

"That one where the lantern hangs? I 'most always notice it, but I didn't look that way to-night. Is there anything the matter with it?"

"Did you ever see a ghost there?"

"No; but I wouldn't be a bit surprised to see something in that line. It was just off that pier that a passenger on this boat jumped overboard and committed suicide. He was standing just where you were a bit ago, and all of a sudden he got over the rail and into the water he went. We stopped the boat and did all we could to save him, but nothing was seen of him after he went overboard."

"What kind of a man was he?"

"I thought he had been on a big spree, and that he had got a touch of the jimjams. He was a hard looking case, one of the toughest subjects I ever saw. His face was as pale as a sheet, and his eyes were wild and queer. I saw him just before he jumped, and he had the look of a crazy man. Say, boss, don't you think you had better go into the cabin and rest a bit?"

I followed the man's advice, and I suppose he must have spoken to the captain about me, as some person connected with the boat kept me in sight until I was safe ashore in Harlem.

As I have said, Iam not a bit of superstitious, and am not a believer in ghosts, even such as are provided by our Spiritualist friends, yet the coincidence of the suicide with my vision and the similarity between his description and the face in the plank troubled me more than I care to confess.

I made no mention of my last experience to my wife, as I thought she had been worried enough about that matter; but I did consult my family physician about it, as I considered my second optical illusion to be indicative of some serious constitutional disorder. He was of the same opinion, and advised me to take an abundance of exercise, as that was the only thing, except an entire absence of work and worry, and a complete change of air and scene, that would be likely to straighten me up.

I hired a row-boat for the remainder of the season, arranged for shortening my working hours, and rowed myself all the way down and up the Harlem and East rivers whenever the tide would serve me. Of course I could not be expected to row against the swift East river current, and I became quite learned in the matter of tides and eddies.

One evening in September, as the tide would be favorable at least as far as the mouth of the Harlem, I invited Charley Guest to take passage in my row-boat and submit to a late dinner at my home in Harlem.

Charley was detained by business, as it happened,

and it was dark when we got away. I took the oars and he took the rudder lines, and we went up the East river with the tide.

In rowing up previously, though I passed close to the pier which I have mentioned, I never again saw the face in the plank. Therefore I was compelled to connect it with the Harlem boat and the suicide, and that circumstance impressed me.

On this occasion we had passed Corlaer's Hook, and were a little below and in sight of that pier, when a row-boat came up and passed us swiftly. It was rowed by two men, who were evidently pulling their best, and in the stern was seated a man whose face strikingly reminded me of the face I had seen framed in the plank. Opposite the pier he jumped overboard, and the remaining two men in the boat, without seeming to notice his performance, pulled swiftly under an open dock and disappeared,

Charley and I allowed our attention to be attracted to the man who went overboard. He partly dived and partly swam to the pier, showed his head there a moment and then suddenly and unaccountably sank.

Before we could recover from our surprise another boat came from the same direction, with two oarsmen, and a man in the stern and one in the bow. Their uniforms told us at once that it was a police boat, and the detective sergeant in the bow hailed us quietly and wanted to know if a row-boat had passed us there.

As briefly as possible I told him what we had seen, and he caused his boat to be pulled in there, and I followed with mine, watching him while he appeared to be examining the planking of the pier.

"Aha!" he exclaimed in the tone of a man who has found something, and he requested me to stay there and take one of his men into my boat, while he went for more help. I could not make out the meaning of this, and my policeman could not or would not explain it to me, though he examined his revolver carefully, as if he were expecting some desperate work.

Shortly I heard voices and the tramping of feet on the pier above, and then the sergeant's boat came around to where I was.

"Those chaps are getting to be mighty smart," said he.

"What chaps? What do you mean? What are you after?"

"River thieves; and it is very lucky that you happened to be just where you were, so that you could point out their den. Just look here."

He pulled a spring catch near the edge of the river—it was then almost high tide—and a square of the plank opened outward, showing a hole into which the water flowed freely. A pistol shot from within told us that somebody resented this intrusion. The sergeant closed the hole at once, and it was not long before the rising tide covered it entirely.

I heard the rending of planks above, and then two shots were fired, followed by a brief struggle in what I may call the bowels of the dock, and two policemen brought to the head of the pier the man whom I had seen in the rowboat that escaped.

"That's the man," said the sergeant. "Take him in and lock him up tight. That is Dan Skilly," he continued, addressing me, "one of the worst of the river thieves and the leader of the East river gang. I might never have found his den if it had not been for you."

I was not at all surprised at this, since I had seen the man in the rowboat and the panel in the plank, and I was really glad that my supposed optical illusion had such a solid basis of fact.

The sergeant hailed a tug, which towed Charley Guest and me in my boat up to Harlem in a hurry. At home I took pleasure in explaining the affair to my wife, and the beauty of it was that Charley and I were not called upon to appear against the river thief, who was sent to Sing Sing last November.—*Stanley Henderson in Drake's Magazine.*

THE AMERICAN ANALYST.

WHAT OUR NEIGHBORS SAY OF US.

AMERICAN ANALYST, 19 Park Place, New York—semi-monthly—still maintains its vigorous warfare against adulterations of food and other articles. It speaks out boldly without fear or favor, giving the titles of the articles which have been vitiated, and the names of the firms who put them before the public. Candy, whisky, chocolate, honey and crockery wares are shown to be impure where issued by certain firms whose brands and names are published in the paper. It would be beneficial to have a similar course adopted in this city.—*San Francisco Commercial Record*, June 14.

WATCH SPRINGS.—In the new process of making watch springs the steel wire is first treated to an oil bath, and is then brought to the proper degree of heat by electricity. With the old method the wire was heated first and then plunged in oil.

IMITATION SYRUP.—Imitation maple syrup is made from glucose by adding an extract obtained by soaking hickory, or sometimes maple bark, in water. The process, said to be patented, imparts the peculiar taste and smell of the real article.

MELLIN'S
TRADE MARK
FOR INFANTS & INVALIDS
FOOD
The Only Perfect Substitute for Mother's Milk.
A Copy of our Book,
The Care and Feeding of Infants
will be MAILED FREE to any address.
DOLIBER, GOODALE & CO.,
40-41-42-43 Central Wharf, Boston, Mass

ASK YOUR GROCER FOR IT. USE NO OTHER.

IMPEROYAL Wheat, Buckwheat and Cereals.



BEST IN THE MARKET.

IMPEROYAL VACUUM COOKED OATS, WHEAT AND HOMINY
AND
Griddle Cake Flour.

M. D. STEVENS' IMPEROYAL NEW PROCESS REFINED FLOURS.

Require but one minute in preparation, without **Salt, Baking Powder or Yeast.**

18 MERCANTILE EXCHANGE,
NEW YORK.

DIRECTIONS ON EACH PACKAGE.

Can be used for all kinds of Pastry, Bread, Biscuit, Griddle Cakes, etc, and its absolute freedom from Alum, Terra Alba, or any injurious ingredient, make it a necessity in every household. No lady can afford to be without it.

SOLD BY FIRST-CLASS GROCERS.

NESTLÉ'S FOOD



IS ESPECIALLY SUITABLE FOR INFANTS IN HOT WEATHER.

Requires No Milk in Its Preparation and is Very Effective in the Prevention of Cholera-Infantum.

"Ziemssen's Cyclopedia of the practice of Medicine," Vol. VII., the standard authority, says: **"In cases of Cholera-Infantum Nestle's Milk Food is alone to be recommended."** Because the gastro-intestinal disorders to which infants are so subject are provided for by presenting only the *nourishing* properties of cow's milk in a digestible form. "Cow's milk produces a coagulated mass of curd or cheese, which the immature gastric juice is **utterly unable to dispose of.**"

This is one of several reasons why infant foods requiring the **addition** of cow's milk fail as a diet in hot weather.

Pamphlet by Prof. Lebert and sample sent on application.

THOS. LEEMING & CO., Sole Agents, New York.

F. W. DEVOE & CO.,

ESTABLISHED 1852.

PURE MIXED PAINTS

WE desire to call attention of consumers to the fact that we guarantee our ready mixed paints to be made only of pure linseed oil and the most permanent pigments. They are not "Chemical," "Rubber," "Patent," or "Fireproof." We use no secret or patent method in manufacturing them by which benzine and water are made to serve the purpose of pure linseed oil. Sample cards containing 50 desirable shades, sent on application.

Catalogues of our different departments to responsible parties.

FINE VARNISHES, WOOD FILLERS, WOOD STAINS.

Artist's Materials. Mathematical Instruments.

Cor. Fulton and William Sts., New York.

COFFIN, DEVOE & CO.,

179 RANDOLPH STREET, CHICAGO.

IMPORTANT

TO THE

MEDICAL PROFESSION.

Send your address to THE NEW YORK PHARMACEUTICAL COMPANY, BEDFORD SPRINGS, MASS., for Illustrative Hand-book, **FREE,** containing valuable formula, special directions, and the testimonials of one thousand physicians in favor of the great merits of

HAYDEN'S

Viburnum Compound,

IN FEMALE DISEASES.

Also, the

URIC SOLVENT,

For KIDNEY DISEASES, and complaints arising therefrom.

NO LOOSE BRISTLES!

NO BLEEDING GUMS!

PERFECTLY POLISHED TEETH!



Three Prominent New Orleans Dentists voice the opinion of their profession after thorough tests.

NEW ORLEANS, June 11th, 1888.

After satisfactory trial, I can safely say that the polish obtained from the Felt is superior to that which is obtained from the bristles. JAS. WEST, D.D.S.

I consider your brush an improvement on the old tooth brush. R. J. FRIEDERICHS.

I can cheerfully recommend it as being superior to any other in the market. I intend to recommend it to all my patrons. Re-pectfully, G. P. MALONEY, D.D.S.

First cost, **60 cents,** for holder and box of 18 Felt Polishers, latter need only be renewed, 25 cents per box; holder imperishable; at all dealers or mailed by HORSEY M'F'G CO., Utica, N. Y.

MASSACHUSETTS ADULTERATIONS.

REPORT OF PROFESSOR E. S. WOODS, ANALYST OF FOOD FOR THE MASSACHUSETTS BOARD OF HEALTH, PUBLISHED IN THE REPORT FOR 1888.

For the year ending September 30, 1887, I received 1676 samples, of which 1178 proved to be of good standard quality and 498 adulterated. Most of the adulterations detected were of the class known as merely fraudulent; those which may be classed as deleterious as well as fraudulent were tin salts in molasses, copper in vegetables, alum in baking powders, and nitro-benzol in extract of almonds. The percentage of adulterated samples, 29.71, is the lowest yet recorded for any year.

VINEGAR—I received 212 samples, which, with few exceptions, were sold as cider vinegar, the exceptions being uncolored "white-wine" vinegar. Eighty-three of these specimens conformed to the statute, which provides that there shall not be less than two per cent. of residue and four and a half of acetic acid. The remaining 129 samples were deficient in acidity or residue or both.

BUTTER—Fifty-eight samples of butter were received and examined; 45 were genuine and 13 adulterated. Several which were passed as genuine were really oleomargarine, but were wrapped in paper so marked.

LARD—Nineteen samples of lard include twelve which were adulterated with tallow.

OLIVE OIL—Seventeen samples; six genuine and eleven spurious. The latter were confined to five brands.

CANNED VEGETABLES—Thirty-two samples of French vegetables were examined with special reference to the presence of copper. This impurity was detected in 22 cases.

CREAM OF TARTAR—I received 201 samples of cream of tartar, 167 of which were genuine and 34 adulterated. The principal adulterants were alum, terra alba, corn starch, tartaric acid and acid phosphate; in many cases more than one of these substances were present in the same sample. Most of the adulterated samples were bought unmarked with the name of the wholesaler.

SODA—Of sixteen samples all but one were genuine. This sample contained a large excess of sulphates.

BAKING POWDERS—Twenty-nine samples were examined for alum which was found to be present in twenty-one.

HONEY—Thirty-five samples were received and nineteen were found to consist chiefly of glucose syrup. Nine of the latter bore no label.

MOLASSES—Eighty-four samples were examined for corn-glucose and salts of tin; twenty-five were found to be adulterated with one or the other, or both, of these substances.

MOLASSES CANDY—Twenty-three samples were examined with special reference to tin, which was found in three samples.

MAPLE SUGAR AND SYRUP—Fourteen samples of the former and nine of the latter were received and examined. Five of the former and three of the latter were found to be adulterated with glucose. One of the samples of maple sugar was composed almost entirely of "molasses sugar."

COFFEE—Of eleven samples received, two were adulterated. No. 4114 contained burnt rye and chicory; No. 4612 was chiefly burnt rye.

ISINGLASS—Two samples examined were found to be adulterated with potato starch.

BLACK PEPPER—One hundred and forty-six samples; 93 genuine; 53 adulterated. The most common adulterants were ground cracker, corn, rice and buckwheat.

WHITE PEPPER—Seventy-one samples; 39 genuine, 32 adulterated. The adulterants used were the same as mentioned under black pepper.

MUSTARD—One hundred and twenty-two samples; 90 genuine, 32 adulterated.

CASSIA—One hundred and twenty-three samples; 101 genuine, 22 adulterated.

GINGER—One hundred and thirty-four samples; 112 genuine, 22 adulterated. Rice, cracker, corn and turmeric were the most common adulterants.

CAYENNE—Twenty-seven samples; 19 genuine, 8 adulterated. The foreign substances were chiefly cracker, corn and ginger.

NUTMEG—Of five samples of ground nutmeg all were genuine, with one exception, which was adulterated with cracker.

CLOVES—Sixty-five samples; 56 of good quality, 9 adulterated. Many of the samples were deficient in oil, but contained no foreign matter. A *small* percentage of stems has not been considered actual adulteration. Corn, cracker, allspice and clove stems were the foreign substances found.

ALLSPICE—Fifty-four samples; 48 genuine; 6 adulterated. The adulterants were cracker, buckwheat and dirt.

MACE—Twenty-two samples; 14 genuine, 8 adulterated. The adulterants were wheat, ginger and wild mace.

EXTRACT OF ALMONDS—Nine samples were received; two were found to contain a poisonous substance—nitrobenzol—which was added to give the almond flavor.

ORANGE CIDER—One sample of this beverage, which purports to be made from Florida oranges and is advertised as "nature's most healthful beverage," proved to be an artificial compound containing about 15 per cent. of sugar, 0.96 per cent. of tartaric acid, and coloring and flavoring substances.

The Standard of Excellence.

KINGSFORD'S

OSWEGO

Pure and Silver Gloss



STARCH

KINGSFORD'S

OSWEGO CORN STARCH

FOR

Puddings, Custards, Blanc-Mange, Etc.

THE PERFECTION OF QUALITY.

WILL PLEASE YOU EVERY TIME.

Always ask your Grocer for these goods.

COLDEN'S

ORIGINAL LABEL:
"Colden's Liebig's Liquid Extract of Beef and Tonic Invigorator."

LIQUID

BEEF TONIC.

AN INVALUABLE AID IN THE TREATMENT OF ALL CASES OF DEBILITY.

Established 15 Years. Endorsed by Scores of Physicians. Essentially Different from all other Beef Tonics. Beware of Imitations.

COLDEN'S LIQUID BEEF TONIC consists of the Extract of Beef (by Baron Liebig's process), spirit rendered non-injurious to the most delicate stomach by extraction of Fusel Oil, soluble Citrate of Iron, Cinchona, Gentian and simple aromatics. An official analysis of this preparation by the eminent chemist ARTHUR HILL HASSALL, M. D., F. R. S., and an endorsement by SIR ERASMUS WILSON, F. R. S., is printed on the label of each bottle.

Its Range of Action Embraces all Cases of Debility.

By the urgent request of several eminent members of the medical profession, I have added to each wineglassful of this preparation two grains of SOLUBLE CITRATE OF IRON, and which is designated on the label as "No. 1," while the same preparation, without Iron, is designated on the label as "No 2."

It acts directly on the sentient gastric nerves, stimulating the follicles to secretion and gives to weakened individuals that first pre-requisite to an improvement, an appetite.

☞ *I will, upon application, send a sample bottle of Colden's Liquid Beef Tonic to any physician in regular standing. Please ask your Dispensing Druggist (if he has not already a supply) to order it. In prescribing this preparation physicians should be particular to mention "COLDEN'S" viz: "EXT. CARNIS. FL. COMP. (COLDEN). It is put up in pint bottles and can be had of Wholesale and Retail Druggists generally throughout the United States.*

C. N. CRITTENTON, Sole Agent,

115 Fulton Street, N. Y.

Please Mention the AMERICAN ANALYST.

IMITATION A FAILURE.

There is nothing that seems easier than imitation. Let any one attain a desirable thing and immediately a host of imitators spring up. Imitation is the sincerest flattery, yet to a manufacturer of any staple article imitation is an annoyance. The most difficult thing to imitate is the product of chemical combination, such for instance as many pharmaceutical compounds. Give the imitator the advantage of a published formula and it would appear at first sight as if there could be no trouble about producing an identical compound. But here there is a limit to the imitators. Even where the formula given furnishes the quantity and quality of the ingredients accurately, there is so much skill and experience required in the selection and compounding of the ingredients that the imitation always falls far short of the original. Every chemist knows that sugar is composed of charcoal and water, yet he cannot combine these two ingredients and make sugar. In as simple a matter as cooking, even a receipt giving all the ingredients to be employed in a dish is never considered of value unless the directions in what manner and order to combine the ingredients and how to proceed at each stage of the cooking are also given. We have in our mind now, as an example, the old and well known Lactopeptine, the published formula of which looks as if it could be easily imitated, and in this very instance we have a forcible illustration of our assertion that the imitation is a total failure. We know from personal knowledge of the first maker of lactopeptine the numerous failures he made until he obtained it in perfection. How can an inexperienced man take his formula without practical working directions and honestly expect to realize the same results? He cannot and does not. He simply takes advantage of an honest pharmaceutical preparation's maker who publishes his formula on the wrapper for the information of the medical profession, and advertises that by substituting his make of pepsin for the pepsin used in the genuine preparation any druggist can save three or four dollars a pound. Any druggist can do that much and more by using any pepsin and needs no illustrated cartoon to teach him dishonesty, but he needs not be told that the results will be far different, and analysis of the two products or their practical administration to the sick will soon prove it. No druggist who would resort to such dishonest substitution can expect to succeed. Three dollars a pound saved or any petty amount will not pay for his loss of confidence and patronage. Physicians will quickly find him out. There is little doubt that the whole series of these imitators have been woeful failures, and that these specious advertisements have only served to call attention to the merits of the original genuine preparation. One thing we may call attention to, that in a paper read before the New York Academy of Medicine by Professor J. Lewis Smith, it was shown that from actual independent tests made by a competent chemist the pepsine used in lactopeptine had a better digestive power than any of the pepsins brought in competition with it. It is also well known that even a successful imitation never can gain public confidence.

CUBEBS.

AN ENGLISH STATEMENT OF THEIR TRADE SIGNIFICANCE.

In 1879 a craze originated in America for asthma cigarettes, of which cubebs formed an important ingredient, and which were recommended for catarrhal affections. Prior to that period the use of the drug had been chiefly confined to the treatment of gonorrhœa, though cubebs formed a principal ingredient in some proprietary lozenges. Asthma cigarettes soon became extremely fashionable in America, and a few speculators bought up every parcel of cubebs upon which they could lay hands on in the European market, with the result of quickly forcing up the price of the drug 10/. or thereabouts. The enormous demand then prevailing for cubebs may be illustrated by the fact that in February, 1880, no less than 737 bags of cubebs arrived at New York in a single shipment. Stimulated by the high prices prevailing, the production in Java had extended considerably, but by this time the American speculators had obtained a tight grip of the article, and manipulated at will, sometimes flooding the European market with large shipments in order to momentarily depress the values of the drug and secure at a low rate any parcels which second-hand holders might offer. At the same time all sorts of tricks were resorted to in order to keep alive the demand for the article in America; but the asthma cigarette craze had by this time subsided. Notwithstanding this, the American speculators have continued their game, and as the article is a comparatively small one, they succeed without much difficulty in controlling the bulk of the supply; hence the continued high price of the drug. The consumption of the article cannot now be said to be on the increase; in fact, during the last few years the imports in America have been falling off. At present our stock has been very much reduced, and at the commencement of the month amounted to only 41 bags in the first hand, while from £21 to £23 is quoted for stalky or good, genuine berries. In Holland, the imports during 1886 amounted to about 200 bags less, less than half of which belonged to the acknowledged genuine variety. The Dutch market is now said to be very bare, the stock at Amsterdam not exceeding 1,050 pounds, 600 pounds of which are gray berries. If recent mail advices from America can be trusted, the stock at New York is also very low, being estimated at less than 7,000 pounds, or barely sufficient for one month's requirements. * * A few years ago a consignment of 19 bags of spurious cubebs was stopped by the New York customs authorities and destroyed. It was then announced that all cubebs imported into the United States would be subjected to a close examination, but if the parcels which are frequently purchased in London for the alleged purpose of exportation to America are in reality shipped to that country, the vigilance of the American customs' offices must have greatly relaxed of late.—*Chem. and Drug.*

WASPS AND BEES.—Bees never injure sound fruit, according to *Popular Gardening*. Wasps will puncture grapes, etc., but with bees it is a physical impossibility. Their mandibles are not so constructed, nor are they strong enough to be used in puncturing fruit. Numerous experiments have been tried; among the rest, one of putting the hives in an apartment, and taking the bees' food away, and making them fast for a few days at a time, and all the time exposing grapes, etc.; but the bees would not do any injury, even under those conditions. If fruit bursts, or is injured by the birds or wasps or something else, the bee will soon suck all the juice; but that is an advantage rather than an injury to the grower, as the sound fruit is apt to rot by coming in contact with such, or by the juice flowing over the sound fruit.

A TERRIBLE SCOURGE.—A writer in a French paper estimates the total loss to France from the ravages of the phylloxera since 1875, when this scourge of the French vineyards first made its appearance, at the enormous sum of ten milliards of francs, or about £400.000,000. This estimate is based upon French official statistics giving the aggregate area of vineyards destroyed in the country at about 2,500,000 acres; and on the assumption that, in addition to the acreage of vines thus totally destroyed, the extent of vineyards more or less infested with the phylloxera amounts to about 500,000 acres, making thus together 3,000,000 acres.

AN ANCIENT ART.—The old Hindoo art of uniting different metals by casting has been successfully revived in a Boston foundry, where steel and bronze are the metals dealt with. Those portions of the finished article which are to be of bronze are first cast, and after cooling are removed from the mold and the surface thoroughly cleaned from all traces of oxide or other impurities. These pieces are then placed in a mold having a form corresponding to that of the finished article, and the vacant spaces are then filled with molten steel, which thoroughly unites with the bronze whenever it comes in contact with it. It is proposed to use this process in the production of firearms, with an inner lining of bronze and an outer jacket of steel, but the prospects of a useful arm being produced in this way do not appear very flattering.

IMPURITIES IN ICE.—A great deal of careful experiment has shown that water in freezing largely expels its coarse, visible contaminations, and also that a large proportion of the invisible bacteria which it contains may be destroyed, even as many as 90 per cent. But still large numbers may remain alive, for many species are quite invulnerable to the action of cold. It has been found that in ice formed from water containing many bacteria, such as water with sewage contamination, the snow ice almost invariably contains many more living bacteria than the more solid, transparent part, so that the snow layer should be especially avoided in ice obtained from questionable sources.

BURNETT'S
PERFECTLY PURE HIGHLY CONCENTRATED
Standard Flavoring
EXTRACTS

THE superiority of these Extracts consists in their
PERFECT PURITY AND GREAT STRENGTH.

There is no subject which should more engross attention than the purity of the preparations which are used in flavoring the various compounds prepared for the human stomach.

They are not only true to their names, but are prepared from fruits of the best quality, and so highly concentrated that a small quantity only need be used.

JOSEPH BURNETT & CO., Boston, Mass.

"ROYAL POLISH"



The Most Reliable Dressing
FOR
Ladies' and Children's Shoes.

It is the BLACKEST.
It COATS the Leather the LEAST.
Does NOT INJURE the Finest Kid.

There is nothing AT ANY PRICE equal in quality, or so convenient and CLEANLY TO USE.

SOLD EVERYWHERE.

Ask Dealers for "BIXBY'S ROYAL POLISH."



"BIXBY'S BEST"
For GENTS' BOOTS.

Shines Quickly!
Saves Labor and
Leather!!

—TRY—
"Size 5" OR
"Size B"
WITH
Pat. Sliding Handle



THE MOST PERFFECT EVER INVENTED.
Working under the box, ready for use when wanted



FINE PORCELAIN.

How the Celebrated Sevres Blue Porcelain is Made.

BY CHARLES LAUB.

[Translated for the American Analyst by Marcus Benjamin].

The celebrated blue obtained by strong firing, as produced at the national factory at Sevres, is prepared by the following process, which has been in use for a large number of years :

1. *Preparation of the Color.*—Fifteen parts of cobalt oxide, which must be as pure as possible, are mixed with about 85 parts of finely pulverized pegmatite, and this mixture fritted, that is to say, exposed to a temperature so that it becomes agglomerated but does not fuse—for this would render its application on porcelain a very difficult matter. This frit, greyish black in color, is powdered, and in that condition is used in the decorative department.

2. *Application.*—The blue which is obtained in strong firing is put on covered ware—that is, it is applied to porcelain previously enameled and fired, but it is also possible to apply it on biscuitry and beneath the enamel, but the results are not so fine. The pulverized blue is mixed with ordinary essence of turpentine and also with turpentine which has previously been oxidized, and in consequence is viscous by exposure to the air. It is called fatty essence. When the mixture, spread and ground on a glass plate, has reached the proper degree of viscosity, it is rubbed over the piece of porcelain to be decorated with a brush—thus the layer is equalized and the porcelain dried at a low temperature in order to expel the volatile essence. The fatty essence remains mixed with the color which it fixes in the sample in the same way as other bodies possessing adhesive properties will do. According to the degree of intensity which is desired, the quantity of the coloring is increased, but it is best to apply it several times rather than to endeavor to obtain the desired thickness at one time.

3. *The Firing.*—The specimens thus prepared are enclosed and are baked at the strong heat of porcelain in ordinary furnaces. Frequently before firing the fatty essence is destroyed by first heating them up to a red heat in a muffle.

Such, in a general way, are the different steps followed in the manufacture of the blue at "strong firing." When the process proceeds without accident, pieces having a magnificent blue color, with a transparent and velvety glaze, are taken out of the furnace, and indeed they are justly entitled to be considered among the most beautiful products of the ceramic art.

Unfortunately, it does not always happen thus, and the accidents which take place in the course of their fabrication are numerous. As most of these are, as I shall show further on, without remedy at the point where the damaged samples must be considered as ruined, so the interest may be understood which lead to the presentation of the causes of these accidents. It has also seemed to me the publication of these researches would have some value. Although the information may be known to the manufacturers, and the facts which I have proved myself be also known, still I have been unable to find anything on this subject in any publication.

The accidents which are liable to occur in the manufacture of the blue are known by the names of shrivelling up (gresillements), lack of uniformity in the glaze (deplacement), spotted appearance of the blue (metallization), etc.

On shrunken, or pieces in which bubbles have formed, the enamel, instead of being smooth and even, is ragged and covered with a number of small holes which make the surface very uneven. According to the intensity of the accident, the blue may be either dark or cloudy, or else it may have disappeared in some way in the formation of the bubbles and the cracks.

The lack of uniformity in the glaze is of a totally different nature. The enamel does not appear to be altered, but instead of being uniformly distributed over the surface of the article it has accumulated at certain places, frequently with sufficient regularity as to lead to the belief that it was so intended—a sort of vermicular movement. Again, on the other hand, large portions of the object are completely stripped and the form presents the appearance of large, white spots alongside of thick and irregular drops of the blue.

Plates are frequently found with a blue border in which the base should be absolutely white, but which are spotted with a blue—sometimes light, sometimes darker—as if a colored liquid had been evaporaled on them.

The spotted appearance is shown by a number of glittering or black spots in the midst of the enameled surface.

The causes of these accidents do not appear to be known at the present time—at least they are nowhere described; and their study has been a long and delicate task, for the reason that they are so numerous, and frequently they run into each other, so complicating the results and unfortunately rendering the solution of the cause more difficult.

The shrinking of the objects is, of all the accidents, the one which is the most serious, because it is without remedy. It is useless, of course, to endeavor to rebake a piece or to reglaze it with a new layer of enamel—the shrinkage will not disappear. Samples in which a bubbled surface appears can not be used satisfactorily again; they may be ground down, covered with blue again and baked, but after firing the same defects are apt to present themselves again.

This serious accident has been attributed to various causes—for instance, to the action of steam, excess of air, the prolongation of too high a temperature, the presence of an excess of carbon monoxide or of carbon dioxide in the furnace. I have examined in turn these hypotheoses and have experimented under conditions presumed to be the most favorable for the reproduction of the accidents. My experiments were made both in the large furnaces of the factory and in the laboratory with the Perrot Furnace, of which on several occasions I have referred to as indispensable for ceramic investigations.

Steam, which is held responsible by some persons for this accident, comes into the porcelain furnace from the lute which is used to fasten the seggars together and from the combustion of wood. In order to determine the action, I had a feeble current of steam directed throughout the entire length of a firing-up on samples of porcelain, one of which was of a blue already fired and of perfect quality. The other was of a blue not yet fired, under the ordinary conditions of manufacture. After the firing, it was apparent that the two samples showed no evidence whatsoever of shrinkage. This experiment was repeated several times with the same results, and hence we assume that steam is not the cause of the accident. It is the same for a current of air. Frequently we directed a current of air into the seggars for the purpose of obtaining certain colors which require the presence of oxygen for their development, and we have heard that shrinkage was due to currents of air. Numerous experiments were made with the larger furnace with arrangements identical under each trial, except that air is excluded; these showed that a current of air was not at all responsible. I also tested the action of an excess of carbon dioxide and of carbon monoxide, alone and mixed. They produce no objectionable effect on the blue.

Finally, I became satisfied that the prolongation of the temperature, even to red white, had no other effect than to weaken the intensity of the blue, in consequence of the volatilization of cobalt, but that it in no way altered the beauty of the ware, and therefore it is erroneous to say that shrunken blue is a roasted blue.

Not one of the causes generally admitted as producing this effect gave the results sought for, and hence I became occupied in forming others, and after a large number of unfruitful experiments, I have succeeded in proving the following facts: When there is introduced into the locality when the blue is fired—seggar or crucible if one uses the Perrot Furnace—an organic substance, or illuminating gas, or hydro carbons, these bodies will instantly produce a disastrous result. If, for example, a piece of wood, even of a very small size, be dropped into the crucible at the time when the blue is being developed, and when the firing may be considered finished, it will be found that the specimen is bloated and grayish in color exactly like the shrunken blues. This action only takes place at the end of the operation, for if any reducing bodies are placed near the blues at the beginning of the firing, they will be without effect. A fact which goes to show that the smoke and carbons which always soil the porcelain at the commencement of the firing do not produce the shrinkage. From these circumstances it appears that the cause of the accident must be attributed to some sort of reduction. Perhaps it is not too much to assume that the presence of a reducing agent at the moment when the blue enamel fires, causes the formation of the alkaline metals and that these metals volatilize, and the blisters which constitute the accident are formed by the departure of these bodies. Since, then, the accident is not superficial, the porcelain itself is affected, and therefore it is impossible to bring the object to a state of perfection.

These facts, which were demonstrated in the laboratory, led me to examine what caused the shrinkage in the factory. Convinced that the cause should be attributed to a reduction brought about by the gases of combustion, and therefore that the form of the porcelain furnace would have some influence in this action; hence it was necessary to ascertain whether all portions of the furnaces produced the same effect of firing under similar conditions.

A series of samples of porcelain, covered with an unfired blue, were in consequence scattered in different parts of the furnace and at various heights. The firing was carried on in the ordinary manner, and on the completion of the operation it was found that in certain zones the blue was perfect, while in others it had been completely ruined. This same experiment, repeated several times, gave identical results in each instance.

(To be continued.)

Electricity and Wine.—Recent experiments in Italy give some facts which prove conclusively that a weak but continuous current of electricity through wine causes a deposit of albuminous substances, diminishes slightly the amount of alcohol, which latter is accounted for by increase of acetic acid. It gives to the wine the bouquet which is otherwise only acquired by age, and without doubt aids in the keeping qualities of the wine. There is a hope expressed, that in time there may be a method found by which sterilization will be accomplished by electricity.

American Analyst,

Published on the 1st and 15th of each month.

Subscription, - - - - - - $1 per year.
Single Copies, - - - - - - 5 cents.
Subscriptions to foreign countries, - $1.50.

Remit by Express Money Order, Draft, P. O. Order, or Registered Letter.

Advertising rates on application.

EUROPEAN AGENCIES.

On file at "American Exchange," 449 Strand, London; and American Exchange," 35 Boulevard Des Capucines, Paris.

THE ANALYST PUBLISHING CO.,
Publishers.

H. LASSING, M. D., } ***Editors.***
T. P. McELRATH, }

No. 19 Park Place, ... New York.

NEW YORK, JULY 1, 1888.

TO OUR EXCHANGES.

To facilitate delivery here, we would ask our exchanges to address

THE AMERICAN ANALYST,
19 Park Place,
New York.

ANSWERS TO CORRESPONDENTS.

CONSTANT READER.—Freckles can be helped by the use of any pure soap to keep the pores clean.

HUGHES.—*What is the composition of Sawyer's Sick Headache Powders of which I send a sample?* They seem to be composed of sugar, bicarbonate of soda and pulsatilla.

MARTHA.—*How do you recommend kid gloves to be cleaned?* The usual method employed, to clean with benzine has the disadvantage, that the look of the gloves tells about the cleaning. A better way is stated to be as follows: spread the gloves smoothly on a folded towel, and rub them well with a piece of flannel dipped into pure milk and then rubbed on a piece of castile soap. The gloves are cleaned when the white ones look yellow, as long as they are wet, and the colored ones look black. On drying, the original colors reappear.

POISONOUS WALL PAPER AND CARPETS.

So much had been written about poisonous wall paper a few years ago the paper manufacturers in this country found themselves compelled, by the force of public opinion, to stop the use of arsenical colors and resolve, in the pool in which they were all united, not to make any more. One great evil about this arsenical wall paper is the popular belief that it is only green colors which contain arsenic, while it is a fact that other colors, especially turkey red, are equally objectionable on that score. It was not American manufacturers alone who were guilty of using such colors, but it has been conclusively proven that European makers desiring to compete for the American trade by attractive colors in their goods, employed arsenic to oxidize their colors much more freely than our home manufacturers. One way of overcoming the objections of buyers to poisonous colors has been to give so-called guarantees. What the value of these is may be judged from a paper lately published by Dr. Charles Harrington in the *Boston Medical and Surgical Journal*. He declares that the degree of reliability of such testimony depends greatly upon the character of the person or firm giving it; upon the character and ability of the chemists employed for the analysis, and upon the amount of mental reservation which may be made at the time of sale. He states also that there are houses selling these goods who give their patrons, in place of a guarantee, a statement that their goods are all examined by their chemists and are perfectly safe—the value of which statement is not clearly perceptible. Just such statements have been advertised. There are some houses who treat inquiries as to safety with withering contempt, descant upon cranks and other offensive persons, show themselves as lusty specimens of manhood brought up in the business, handling the alleged poison day in and day out without the slightest injury, and frighten their customers, who may not wish to be considered imbeciles, into buying without a guaranty of any sort. The manufacturer's guarantees, about which one hears so much, are hardly worth the paper upon which they are written to the purchaser from a retailer, because even where the guarantor might be responsible the purchaser has no means of redress aside from that which he may have against the party from whom he purchases. The only safe way is positively to decline to purchase goods made with arsenical colors. The certificates of some of the best known foreign chemists even are not always to be relied on, for Dr. Harrington relates a case where eight samples of wall paper imported from England had been rejected in Boston as containing arsenic. The manufacturers had submitted this paper to no less an authority than Professor John Attfield in London, who reported the samples as entirely free from arsenic and indulged in some sneering remarks about the American chemist. The samples were thereupon submitted to three of our best American chemists who, after separate analyses, reported that the same samples all contained arsenic—one as much as over four grains of arsenic to the square yard. These eight papers were Chatsworth talc, Brandon, Malines, Iberia, Coniston blue, Monkshood, Wentworth on white and Wentworth on yellow. Whatever has been said about the colors in wall paper also holds good about carpets, hangings, furniture coverings, curtains and many other fabrics in every day use. Many headaches properly traced up might be laid to this cause. Sewer gas has undoubtedly often been anathematized for illness caused by arsenical colors.

WHAT CHICAGO PACKERS SELL.

An uninitiated observer might think that the commodities sold by Chicago packing-houses are very limited. In this he would be very much mistaken. The source of profit to Chicago packing-houses is the utilizing of the waste products, and by closely watching these they are able to undersell their competitors in other cities, who have not the market for such wastes. In looking over the price current of one of the largest of these Chicago packing-houses, recently, we came across a detailed statement of all they had to sell, and a reproduction with some necessary explanations will perhaps be of general interest. Of meats, the fresh cuts consist of ribs, loins, shortloins, tenderloins, sirloin butts, rump butts, rolls, strip steaks and strip loins. Then come the canned, smoked and barrelled meats, consisting of canned, corned, boiled, roast and chipped beef, ox tongues, lunch tongues, English brawn, mince steak, potted tongues, potted ham, deviled ham and soups. The barrelled meats include plate, rollettes, ox tongues, tripe, beef hams and the smoked meats of dried beef hams in sets, insides and knuckles, knuckles, insides, regular clods, assorted and bologna. Next we come to the beef casings, mostly used for sausage casings, but some for other purposes, such as gold beaters skin, which is taken from the membrane of the lower bowel, snuff bladders and several membranes for delicate Parisian skin work. The casings are known by the technical names of middles, rounds, bungs, weasands, bladders and gut skins. Then there are the oils, tallows and stearine, including neatsfoot oil, tallow oil, refined, acidless tallow oil and cylinder, refined cylinder, and acidless cylin-der tallow, beef tallow, oleo stearine and tallow stearine. Finally, the fertilizers, which are known as steam bone and ordinary tankage, ground and unground, and ground blood. All these are valued according to the amount of ammonia they contain. Some trifling items, such as fresh blood taken for various purposes, including compression into buttons, furniture ornaments, etc., or to be converted into blood albumen, have been omitted.

DEATH OF DR. JENSEN.

We regret to announce the death of Dr. Carl L. Jensen, the well known chemist, who has been conspicuously identified with the manufacture of pepsin for several years, and whose card is familiar to the readers of the AMERICAN ANALYST. Dr. Jensen died in this city on Saturday, June 9. He was in his forty-third year, a native of Norway, and graduated as a chemist at Copenhagen, Denmark. In 1869 he came to this country and began his career in Chicago as clerk in a drug store, of which he at length became owner. Having been burned out in the great fire of 1871 he moved to Dakota and turned his attention to the manufacture of pepsin. After a few years he sold his store and removed to Philadelphia. There he had lived for eight years. He was a member of the Philadelphia Drug Exchange, and was also connected with the Odd Fellows' Society and other organizations. He leaves a widow and three children.

A JUST VERDICT.

The *National Druggist* of St. Louis in its June 15th issue thus gives voice to the general sentiment concerning a recent litigation:

"Our contemporary, the AMERICAN ANALYST, is to be congratulated on the outcome of its bout with "Moxie—the Nerve Food," the proprietors of which had the nerve (*not* derived from taking their own medicine) to sue our friends for libel for telling the plain truth about the nostrum. A verdict like that of Fisher's Alley in a celebrated case—"served 'em right"—was promptly rendered in favor of the defendants. Next."

BEER.

THE BEERS TO DRINK AND THE BEERS TO AVOID.

(Written for the AMERICAN ANALYST by Francis Wyatt, Ph. D.)

The characteristic qualities of malt liquors have been frequently and ably described and discussed by various writers in the AMERICAN ANALYST, and I shall therefore be readily excused if I refrain from going over old ground, and if I merely remind my readers of a very few salient facts. Our late successful investigations into the value of different foods have created an immense revolution in the fabrication of beer. From a commonplace and ignorantly conducted industry, brewing has been gradually raised to the position of a science, that can no longer be practiced save by those who are possessed of a technical education and great mechanical skill. One of the results of this progress has been the division of beers into two distinct and specific classes; those that are light or vinous, and those that are heavy and viscous. The first contain a high percentage of alcohol and a low percentage of body, or extractive, or solid matter, while the second possess but little alcohol and a maximum of extract. The most elaborate, rational and absolute rules having been established for the production of each variety, there should be no difficulty in procuring entirely pure and wholesome beverages, free from all traces of impurity and rich in such elements as are generally considered to be healthful to the moderate consumer.

I propose to devote a few paragraphs to an examination of the relative properties of these two classes of beer, and I choose this thirsty season of the year because I believe that now, more than at any other time, we should seek to establish some rational rule whereby under the varying conditions of our climate, and with due regard for age, occupation and temperament, we might choose between them. There is, of course, nothing modern in the custom of beer drinking. It was indulged in by the old Egyptians, and if we may believe Tacitus was quaffed by the primitive Teutons in draughts that would appal our most intrepid topers. From time immemorial it has been understood that, with the alcohol, and its rapidly stimulating action upon the vital forces, and the carbonic acid gas with its tonic and bracing effect upon the stomachic nerves, malt liquors combine a by no means insignificant quantity of solid substances of the nature of food. They have therefore been indulged in with the more impunity, and it is only of late years, since the heavy lager beers of the Bavarian type have become so popular, that we have begun to realize the evils occasioned by those very food elements, which in the beers of our grandfathers were justly regarded as their most precious attribute. Our ancestors drank and our fathers still drink light beer or ale, with a high percentage (say 8 per cent.) of alcohol, and with very little extract, whereas we have come to prefer those heavy lager beers in which the action of the diastase has been purposely checked in the mash tub when the starch of the malt has been converted into dextrine, and before it has had time to be converted into any more sugar than will suffice to give 3 per cent., or at the utmost 4 per cent. of alcohol to the finished beer. Now, without taking the trouble to quote from many distinguished medical authorities, or from the statistics, of which I have a voluminous pile on hand, I may venture upon the broad statement that the continuous imbibition of large quantities of the gummy and viscous dextrine, has the effect of depositing a thick lining upon the walls of the stomach. That organ, thus coated, craves for and readily absorbs enormous quantities of liquid, but gradually turns from, and refuses to assimilate, the necessary daily ration of ordinary solid food.

The occurrence of this phenomenon is too real for doubt or for denial. If it is less frequent or altogether absent in the case of very young and healthy men accustomed to the performance of laborious physical work, it is as unvarying as remarkable in the case of older men who pursue a sedentary calling and have but little opportunity for bodily exertion.

Nor can we wonder at this when we remember the facts. By their action on the stomach heavy beers exercise a deadening or lowering influence on the entire nervous system. The effect of their small proportion of alcohol on the brain worker is so extremely slow as to be almost insignificant, unless such quantities be taken that the stomach be literally overloaded with liquid and extractive matter, in which case there must inevitably result an extreme irritation of all the digestive functions, followed by a general physical and intellectual depression. It has been shown that the habitual use of these dextrine beers induces a relaxation of the vocal chords and seriously affects the voice—that the young people of the better class in a community where such beers are in vogue therefore soon cease to sing, turn early from the dance, become serious in their thoughts and calm, not to say grave, in their deportment. The average inhabitant of cities, not being a manual laborer, who drinks heavy beers, is eminently distinguished from the drinker of wines or of light and vinous beers by an entire lack of that boisterous jollity which we have always been accustomed to associate with the recreations and amusement of youth. There is no effervescence in his character, he knows no generous impulse, no excitement, no ennervation, and makes no revolutions. He seldom craves for the delight of a "square meal;" his body throws off with the greatest difficulty its waste or used-up material; his blood therefore thickens and becomes slow and irregular in its circulation; his liver becomes enlarged; his temper and disposition becomes soured; he is soon afflicted with those miseries with which our dyspeptic brethren have familiarized us, and he goes down to the grave long before his time. Shall I be accused of grossly exaggerating the situation and charged with some grave misstatements of the facts? If so I can only say that I am endeavoring to convey a clear idea of the evil that must attend the unwise selection of our most popular beverage. I believe that in the backwoods or in some primitive state of society composed of wood-choppers and water-drawers heavy beers can be taken with more benefit and greater impunity than beers of a more spirituous nature. I will even go farther and say that the hard-working laboring young men in our cities may derive benefit rather than harm from their use, and that an occasional glass might exercise a salutary and calming influence upon the nervous system of our average over-wrought brain-worker. But beyond this I cannot go, for I have but to look around me to see all the evidences of hurry and high pressure. I cannot forget that we live in an age of telegraphy and telephones; that fortunes are made and lost in a single hour; that our wits must be constantly sharpened; that our conception must be rapid and our action resolute and energetic; and that directly we sink into indolence or lethargy we drop out of life's race.

In my own opinion—and I have formed that opinion after very extended experience and observation—the heavy beers that have now become so popular in our midst are not at all the most suitable to the requirements of the average New Yorker. What would be far better in every respect would be a light or vinous beer or a well brewed ale—something, in short, that shall as nearly as possible possess the beautifully stimulating qualities of natural wine, and that, by increasing our appetites and assisting our digestive organs to more readily perform their duties, shall accelerate the circulation of the blood and increase, rather than weigh down, the buoyancy of the spirits. Of course, there must be no abuse of such beers, since their action being exerted directly upon the nerve centres and the brain, would ultimately be even more disastrous, if constantly taken in excess, than that of the heavy variety.

DOMESTIC DIETETICS.

SEASONABLE FOOD.

July.

MEATS. — Beef, mutton, lamb, veal, ham, kidneys, liver.

GAME AND POULTRY.—Pigeon, chicken, duck.

FISH.—bass, blackfish, bluefish, clams, cod, crabs, eels, flounder, haddock, halibut, lamprey, lobster, mackerel, mussels, perch, porgie, prawn, rockfish, salmon, trout, sea bass, shad, sturgeon, turtle, white fish, whiting.

VEGETABLES. — Beans, carrots, cauliflower, corn, cucumbers, egg plant, garlic, lettuce, onions, parsley, parsnips, potatoes, radishes, rhubarb, savoy, shallots, spinach, sprouts, tomatoes, turnips.

FRUIT. — Apples, apricots, blackberries, cherries, gooseberries, huckleberries, melons, oranges, pears, pineapples, plums, raspberries, strawberries.

PRACTICAL RECIPES.

BEEFSTEAKS—A LA FRANCAISE.—Take a fine steak and dip it in cold spring water, let it drain a few minutes, lay it in a dish, and pour over it sufficient clarified butter hot and cover it, let it remain twelve hours, then remove the butter and roll the steak with the rolling-pin a dozen times, rather hardly; let it lie in front of a clear fire ten minutes, turning it once or twice, then put it into a frying-pan with water half an inch in depth, and let it fry until it browns. Mince some parsley very fine, chop an eschalot as fine as can be, and season with cayenne, salt, and a little white pepper, work them with a lump of fresh butter, and when the steak is brown, take it from the pan, rub it well with the mixture on both sides, and return it to the pan until done enough; dish it, thicken the gravy in the pan with a little butter rolled in flour if it requires it, and pour it over the steak and serve. And you will never say that steak is not sometimes a good dish in France.

SOUP—A LA REINE VICTORIA.—Take a pound and a half lean veal, place it in a stew-pan with a slice of lean bacon, an onion with one clove, a blade of mace, a head of celery, a handful of sweet herbs, four ounces of fresh butter, and some whole white pepper, set it over a clear fire, and move it frequently to prevent burning, or the flavor is ruined. Have some white gravy ready, thicken it, add two quarts to the above ingredients with a few strips of mushrooms; let it boil, and when it reaches that point remove it, and skim it clean of all scum and fat. Have ready some vermicelli which has been soaked five minutes in cold water and subsequently stewed in a strong broth; strain on it the soup, and serve with blanched chervil leaves in it.

CURRIED FISH.—After the fish has laid some hours in salt, cut it into pieces and stew it in water enough to cover it. In this water mix a large tablespoonful of curry powder. Fry in a quarter of a pound of butter, a shallot and two or three onions minced, with a little pepper and salt. When well browned add it to the fish, and stew altogether till it be quite tender. Any kind of fish can be used.

MAYONNAISE ON TOMATOES.—Choose firm, smooth, ripe tomatoes, lay them in the ice-box and keep them as cold as possible until they are placed on the table. Prepare the dressing by beating the yolks of two raw eggs with a teaspoonful of mixed mustard, and adding to it, drop by drop, olive oil, beating constantly until it begins to thicken; then put in a few drops of lemon juice and more oil; alternating the two until the sauce has become so thick that it will not run. Stir in a teaspoonful of salt and a teaspoonful of rich cream, and set it away in a covered bowl. The eggs should be cold, the oil added slowly, and the stirring (with a silver fork) be unremitting in order to make this sauce a success. The cream may be omitted, and strong vinegar used in place of the lemon juice. Peel the tomatoes with a sharp knife (do not scald), arrange them neatly on a dish, and turn the sauce over them. Garnish with curled parsley, or place a border of finely shaved cabbage around the outer edge and parsley in the center.

PLAIN SHORT CAKE.—One quart flour loosely measured, one saltspoonful of salt, and two heaping teaspoonfuls Horsford's Baking Powder; mix while dry. Add one-quarter pound butter and one-eighth pound lard, and enough cold water to make a thick paste. Roll out half an inch thick or less, and cut into squares; prick with a fork and bake immediately.

POP-OVERS.—One pint milk, one pint flour, butter size of a walnut, three eggs beaten light, pinch of salt; add eggs last. Bake in cups, filling them half full.

COTTAGE CHEESE.—When the milk is nicely clabbered put it on the stove and let it remain until well scalded, but do not allow it to boil. Pour both the curd and the whey into a bag made of cheese cloth, and suspend it until well drained, and the curd is left quite dry; turn this latter into a pan and add salt, a bit of butter, and enough sweet cream to make quite moist. It can be molded into little balls, or put into a glass dish without further preparation.

DOLLY VARDEN CAKE.—One-half of a cupful of butter, one cupful of sugar, two eggs, three-quarters of a cupful of milk, two teaspoonfuls of Horsfords Baking

Powder, raisins, currants, citron and spices. Make into a dough, leaving out the raisins, currants, citron and spices; divide into three parts; bake two layers of the plain dough, mix the raisins, chopped fine, the currants, citron and spices with the remaining third of the dough, and bake; put the layers together with frosting between, and the dark layer in the centre.

Red Raspberry Ice Cream.—To four quarts of cream, four pounds of sugar, two quarts of strained strawberry juice, four eggs and the strained juice of two oranges, and carmine to heighten the color, mix the cream, sugar, vanilla and the eggs; place these upon the fire and bring to the boiling point; then strain into an earthern or stoneware vessel, and when cool pour into the freezer and freeze. When frozen add the juices and freeze again, adding with the juices a teaspoonful of liquid cochineal or the same quantity of prepared carmine to give a pale rose color to the cream. Observe that fruit juices are not to be cooked with cream in any case; they must be mixed and beaten into the cream after it is frozen.

Red Currant Jelly for Present Use.—Set on the fire in a pan a pint of clarified sugar, when it boils put in a quart of picked red currants, in which let them boil for half an hour; skim it well, and at times add a little cold water to raise the scum; when boiled enough, run the liquor through a sieve into a basin into which you have squeezed three lemons, then put in some isinglass and set your jelly in a mould on ice to cool.

To Drive Away Red Ants, I.—One pint of tar in two quarts of hot water; put in earthern vessels in closets, or sprinkle sea-sand, or strew oyster shells or red cedar shavings.—L. T.

Red Ants, II.—Clean the refrigerator thoroughly every morning, and then throw a little clear water into the compartment where butter and other articles of food are kept. You may prevent them getting into the sugar barrel in this manner: Place the barrel of sugar on a stool, putting each leg into an oyster or fruit can that has been cut in half, and fill the can half full of water.

TO NEWSDEALERS.

The wholesale agents for the American Analyst are the American News Company, through whom and the various news companies dealers can obtain their supplies. This paper is returnable; hence newsdealers need not run any risk and can keep a supply on hand. Dealers in the various cities can obtain their supplies as follows:

Albany, N. Y., Albany News Company.
Baltimore, Md., Baltimore News Company.
Boston, Mass., New England News Company.
Brooklyn, L. I., Brooklyn News Company.
Brooklyn, E. D., Williamsburgh News Company.
Chicago, Ill., Western News Company.
Cincinnati, Ohio, Cincinnati News Company.
Cleveland, Ohio, Cleve and News Company.
Clifton, Ontario, Canada, Toronto News Company.
Denver, Col., Denver News Company.
Detroit, Mich., Detroit News Company.
Kansas City, Mo., South-Western News Company.
Montreal, Canada, Montreal News Company.
New York, N. Y. { American News Company. / International News Company. / National News Company.
Newark, N. J., Newark News Company.
New Orleans, La., New Orleans News Company.
Omaha, Neb., Omaha News Company.
Philadelphia, Pa., Central News Company.
Pittsburgh, Pa., Pittsburgh News Company.
Providence, R. I,, Rhode Island News Company.
San Francisco, Cal., San Francisco News Company.
St. Louis, Mo., St. Louis News Company.
St. Paul, Minn., Minnesota News Company.
Troy, New York, Northern News Company.
Toronto, Ontario, Canada, Toronto News Company.
Washington, D. C., Washington News Company.

Subscriptions $1 per year. Now is the time to subscribe.

OUR MISSION.

WHAT THE AMERICAN ANALYST IS DOING.

FIGHTING ADULTERATION.

The steadily growing favor which the American Analyst is constantly receiving at the hands of both the reading and the business public is the best evidence that could be afforded of the useful field of effort it occupies. It was the pioneer journal in this country to take up the fight against adulteration, and stands to-day, by public acknowledgment, the only competent exponent of the principles involved in that momentous struggle. To this end the realm of sophistication and fraud has been thoroughly explored, and its corruptions, as far as practicable, exposed to the public view. Charlatans, adulterators, and handlers of poisonous food have been summarily and uncompromisingly dealt with. Humbugs seeking to enrich themselves, through the sale of high-sounding specifics for human ailments, have been subjected to the crucial test of thorough chemical analysis of their goods, and where the latter, as too frequently occurred, proved to be utter frauds in name, composition, and pretended effects upon the system, the real facts have been placed before our readers in order to save the public from further unconscious imposition. The veil of chemical mystery in which tricksters of this kind ostentatiously envelop their processes of manufacture, protects them as yet from the criminal laws to which other confidence operators are held amenable, and the only method for counteracting their nefarious schemes is through public exposure by the newspaper press. In exposing this species of fraud, the American Analyst has conferred a benefit upon the community, to which the latter is giving grateful and substantial recognition.

SANITARY AND FOOD REFORMS.

In addition to the foregoing, the American Analyst is in constant co-operation with the Boards of Health of this and other cities, in efforts to secure sanitary and food reforms through organized methods, and while it is nobody's mouthpiece, it is conceded to be the only popular medium through which those bodies can bring their purposes and action intelligently before the general public. Reaching as it does all classes, manufacturers, merchants, physicians, chemists and private families all over the land, its influence is exerted over a vast radius, producing results as visibly marked as they are widespreading.

HOUSEHOLD MATTERS.

"Domestic Dietetics" is a department of special interest to ladies. It is very different and far superior to the ordinary cook book in that it tells the housewife suggestively what to buy, what foods are in season, as well as how to prepare the many varieties of dishes, all in a practical way easily followed. Other matters of great interest to housewives are also discussed.

PRACTICAL DISCUSSIONS.

Numerous other interests are also faithfully represented in our columns, such as the regular series of articles entitled, "Some Every Day Suggestions," relating to common experiences of society, the question of hygiene, and an infinite variety of practical subjects. In short, the American Analyst always keeps abreast in giving the fullest information on all matters directly or indirectly in the line of its proper field.

SCIENTIFIC INVESTIGATION.

The business transacted in the office of the American Analyst does not by any means all come to the surface in the pages of the paper. Minute analyses of chemical compounds, careful assays of minerals, examinations of questionable oils or doubtful condiments, and the many subtle operations incident to laboratory work are constantly required of us by correspondents far and near, and the results in many cases are not publicly recorded. In this manner, the influence of the paper encompasses a vast radius, from every point of which we receive constant expressions of approval, verbally, and in more substantial shape.

SUBSCRIPTION $1 PER YEAR.

Considering the amount of practical information regularly embodied in its contents, together with the fact that the subscription price for an entire year is only one dollar we believe the day is approaching when the American Analyst will be regularly welcomed in every intelligent household in the land. Address,

Analyst Publishing Co.,
19 *Park Place, N. Y.*

A Hot Well.—At Buda-Pesth a well which has been bored to a depth not previously reached, now yields daily 176,000 gallons of water at 158° F. The attempt will be made to bore until the temperature of the water reached shall be 176°. Whether it will be possible in this manner to heat dwellings and churches, conservatories, and even gardens, is still an open question.

A New Drawing Process.—A process has been perfected and patented for drawing upon wood by means of a fine metallic point kept red hot, so that the lines are actually burned into the surface. A powerful oxhydrogen, or rather flame, keeps the point always at a high temperature, and yet the apparatus is so compact that it may be used with the ease and freedom of a pencil. It is, furthermore, so adjusted as to produce at will all shades of brown, from the lightest shade to that verging on black.

Electric Cutter.—The process of cutting glass tubes by electricity has succeeded admirably. The tube is surrounded with fine wire, and the extremities of the latter are put in communication with a source of electricity. It is, of course, necessary that the wire should adhere closely to the glass. When a current is passed through the wire the latter becomes red hot and heats the glass beneath it, and a single drop of water deposited on the heated place will cause a clean breakage of the glass at that point. The thicker the tube the cleaner the fracture.

Duration of Disease.—The duration of the infection stages of various diseases is thus given by Dr. T. F. Pearse, an English physician: Measels, from the second day of the disease for three weeks; small-pox, from the first day for four weeks; scarlet fever, from the fourth day for seven weeks; mumps, from the second day for three weeks; diphtheria, from the first day for three weeks. The incubation periods, or intervals occurring between exposure to infection and the first symptoms, are as follows: Whooping cough, fourteen days; mumps, eighteen days; measles, ten days; small-pox, twelve days; scarlet fever, three days; diphtheria, fourteen days.

Ozone in Consumption.—In some experiments with ozone as a curative agent an English lady, so far advanced in consumption that her case appeared hopeless, has been treated with inhalations of this gas with results described as marvelous. After a month's treatment the appetite was regained, the sleep calm and refreshing, and there was a very good prospect of recovery. The ozone was prepared by passing a stream of oxygen through the current of an induction coil, and was administered with atmospheric air in the proportion of one in five. The experimenter has reached the conclusion that the ozone treatment is specially applicable to all germ diseases.—*London Public Opinion.*

Power of Dynamite.—Dynamite is so instantaneous in its action that a green leaf can be compressed into the hardest steel before it has time to flatten. One of the experiments at the United States Torpedo Works was to place some leaves between two heavy flat pieces of iron, set them on a firm foundation and see what gun-cotton would do in forcing the iron pieces together. A charge was placed upon them by compressing the gun-cotton into a cylindrical form about one inch thick and three or four inches in diameter, through the centre of which a hole is made for a cap of fulminate of mercury, by which the gun-cotton is exploded. The reaction was so great, from merely being exploded in the open air, that one of the iron pieces was driven down upon the other quick enough to catch an impression of the leaves before they could escape.

HIRSUTE ELECTROLYSIS.

RELATIONS OF THE TONSORIAL ART TO FUTURE SCIENCE.

The method of destroying hair follicles in the pores of the skin by means of a needle heated to incandescence by an electric current after insertion, has set many a woman rejoicing in the annihilation of moustaches of various degrees of visibility, or perhaps in the path made between meeting eyebrows, or even in the destruction, root and branch, of a stubborn tuft of hair growing from cheek or jaw like sedgegrass in a field; and she has thanked electricity for the removal of at least one incubus to beauty, doubtless relating in confidence the depilatory experience as one of the wonders of that "great

force." But is it truly a wonder when a white-hot platinum needle singes out the root of the hair that it kills the hair? How could it be otherwise? "What is to hinder?" as the man said when called upon to admire the Falls of Niagara as a great wonder of nature. And he gave a description of his idea of wonder that the water should flow up the stream and ascend the falls. In this case the method used would be much more truly wonderful if the dermatologist should reverse the action of his apparatus and raise a capilliary crop, *ad libitum*. As Carlyle says, "Instead of carrying the torch for burning, let him wield the hammer for building." Picture to yourself a gilded youth sitting in an operating chair like those in tensorial emporiums, having side whiskers or moustache germinated according to the whim of the hour, while there could be a resurrection on the shiny occupits of those whose foreheads extend pretty well towards the spinal column. If Captain Gulliver, of blessed memory, gave as his judgment that the man who caused two blades of grass to grow where one grew before was worthy of the prize offered by the King of Lilliput, how much more shall be the reward of those who cause spears of hair to grow where none grew before—that is since before the war. As the locomotive has not dispensed with the service of horses, so the second form of this apparatus would not obviate all needs of its present application. For, in addition to the purposes before alluded to, there would still remain men desiring more or less of a beard removed, yet not wishing either to shave or to be shaved; and then there would still be those desirous of posing as a phrenological phenomenon, who would have the area of the forehead enlarged accordingly. All these matters furnish a promising field for those who can reverse the action of hirsute electrolytic process, and raise capilliary crops. The field may not be entirely overrun, for there are everywhere persons who, like the knight in Hudibras,

"Can discern and divide
The hair 'twixt south and southwest side."

and some may yet have their old preferences for haircut and shave, while others may be so lost to youthful vanity as to preserve their denuded scalp in all its present polish.—*Electrical Review.*

RED NOSES.

A very common error is the belief that a red nose or chin, and pimples or "blossoms" about that part of the face, are the result of hard drinking, and are always indicative of that vice. With many persons this is the case. The acceleration of the movement of the heart, the rapid heating of the body and the slow weakening of the blood, three of the chief results of the use of alcohol upon the system, too often find expression in the unsightly symptoms mentioned, as well as others more serious.

But these symptoms often arise from other and very different causes. In some instances exposure to the sunlight will produce results hardly distinguishable from those of alcoholic indulgence, and more especially with those with impure blood, or whose habits have not been marked by the regularity demanded by health. Tight lacing or even the mere wearing of stays, no matter how loosely these may fit, or how soft and flexible the material from which they are made, frequently exercises the same effect in every regard. Many a temperate woman and abstinent maid has acquired the reputation of being a hard drinker from the appearance of her face, when, as a matter of fact, her only fault has been the desire to look attractive and its foolish expression in the compression of her waist and abdomen. Gluttony is another common cause of a red nose and cutaneous disorders of the face. And in this regard gluttony does not mean the eating of large quantities of food, but merely of more than the system requires. Two-and-a-half pounds of nutriment per diem may be gluttony for a young man or a young woman who takes little or no exercise, and passes the day reading light literature, or idly conversing, where five pounds would be abstemiousness to a young collegian playing ball and rowing twelve hours out of the twenty-four. Many diseases, and more particularly the affections of the erysipelas class, tend to express themselves in and upon the nose and face, not only in all of their forms and stages, but even after they have been nominally cured, leave or imprint a tendency upon the system to the same unsightly and disgusting symptoms. However serious or deep-seated the causes, it is always possible and easy to cure and prevent the effects. Whether the original source of the trouble lies in constitutional disease, depraved condition of the system, hard drinking, over-eating, sunburn or tight-lacing, it cannot produce the blemishes described until after the blood has been surcharged with humors and the vital organs have become weakened in tone and activity. These are in every instance the immediate cause of the trouble. If they be stopped before they reach their full development, no skin disease will break out. If they be properly treated after that point, the disease soon disappears and the sufferer speedily regains his beauty and health.

The treatment is simplicity itself and consists in the regular use of Ayer's Sarsaparilla, the best and only reliable blood purifier and vital tonic. With it, of course, should go bathing, exercise, sunlight, fresh air, good hours, regular habits and a simple diet, in which fruit and vegetables are prominent features. These increase its efficiency. Alone they are of little avail. Taken with Ayer's Sarsaparilla they reinforce and aid it marvelously. The impurities of the blood are rapidly consumed or expelled, the stomach, bowels, liver and kidneys are invigorated and put into normal healthy action, the pressure on the capillaries is removed and the redness, bloat, pimples, postule and blotches disappear as if by magic. If this admirable remedy be taken in time, the girl or woman can preserve the complexion of youth to old age, and both man and woman can escape without pain or trouble the unpleasant and unsightly complaints which are so certain to result from the pressure of modern civilized life.

BUSINESS NOTES.

A WONDERFUL SPRING.

THOMPSON'S BROMINE-ARSENIC SPRINGS WATER.

(Editorial from *Virginia Medical Monthly.*)

It is seldom we allow ourselves to become enthusiastic over mineral waters newly sprung upon the market; but in the instance of the Bromine-Arsenic Springs Water, such wonderful statements as to its remedial qualities have been made by parties capable of deliberate judgement, and such apparently wonderful results have come under our personal observation, that our commendation of it does not stand as an "editorial puff" but it becomes an editorial duty to call special attention to its beneficial therapeutic effects in a large and a commonly met-with class of cases in general practice. We are of opinion that the advertisement statements as to the therapeutic value of this water do not over-estimate its rightful claims to careful professional attention and prescription. While for certain forms of nervous dyspepsia, due to too active mental pre-occupation, etc.; and as a tonic sedative in cases of insomnia and like forms of neurasthenia, resulting from too great brain and general nervous activity and excitability, we scarcely think the advertisement is strongly enough worded to make that impression its merit justifies. The fact of the late discovery of the medical values—tonic, alterative, sedative, etc.—of this water, is easily accounted for. The Spring is in Ashe County, N. C., thirty or more miles from any present railway, and is more or less remote from any of the main lines of public travel. It is in a mountainous section of country, and, until 1885 (when a small hotel was established near by), it was perhaps a mile or so from even a mountain farm house. The water does not gush out boldly from the hill-side, so as to attract the special attention of the passer-by, but rather oozes in trickling streams from the base of the hill, and drains down a few feet, but in no distinct brook, into the streamlet a few yards off. Thus the water was not easily procurable until a basin was blasted in the rock, in which, by suitable drains, to collect it; and even now the supply is so limited as will not long satisfy the rapidly growing demand. Some two years ago, a farmer's son, who had some skin eruption on his hand or arm, incidentally, while passing by, washed his sores with some of the water, and they rapidly healed. The fact attracted the attention of the farmer's family, who used the water with like good effect on some of their friends, and soon the curative qualities of this water became neighborhood talk. This attracted the attention of some scientists, who had an analysis made of the water, with the result recorded. Now that its properties are becoming more and more widely known to the professional men of North Carolina and Virginia, the water is being used by all who can secure supplies. And while much is already known of its value, many of its virtues are yet to be studied with a hopeful prospect of more valuable information. The New York Agent, Thomas Davenport, 42 College Place, N. Y., or the manager at Saltville, Va., will, on request, mail free a pamphlet giving full information about this Spring.

YELLOWSTONE NATIONAL PARK, PACIFIC COAST AND ALASKA.

The Yellowstone Park is unquestionably attracting more attention at the present time as a tourist resort, than any other place on the face of the earth. This spot is reached by rail only by the Northern Pacific Railroad, the famous dining-car line to the Pacific Coast, the only one of the transcontinental lines running dining cars of any description whatever. A book ticket will be sold at the Eastern terminals of the Northern Pacific for $110, including rail and stage transportation, meals on dining cars, Pulman and five day's accommodations south of Livingston in the Park.

The Alaska tour is also one that is attracting wide attention. The rates and facilities offered for making this trip are better via the Northern Pacific Railroad than by any other line. The attractions offered *en route* via the Northern Pacific, such as the ride through the Lake Park region of Minnesota, by the great wheat fields of Dakota, along the Yellowstone River and Clark's Fork of the Columbia, through the famous Spokane Falls region, over the Cascade Range, by the Palisades of the Columbia, Puget Sound, etc., together with the superior accommodations offered, make a trip via this route especially enjoyable. By writing Charles S. Fee, General Passenger Agent, N. P. R. R., St. Paul, Minn., you will receive copy of "Wonderland" and other books descriptive of the Yellowstone Park, Alaska and the country in general traversed by the "Dining Car and Yellowstone Park route."

MEDICINES.

Webster defines medicine to be any substance administered in the treatment of a disease—a remedial agent. It therefore appears that medicine must be so prepared that if administered with good judgment it is calculated to have a beneficial effect upon the person who takes it. This requires skill and discernment only begotten of education and experience. The human system is a delicately constructed and intricate piece of machinery, so closely and intimately connected in its various parts that when one part gets out of order it is almost sure to affect many other parts. In other machinery, the most likely person to remedy any defect is a competent workman, who applies the remedy by taking the machinery to pieces, examining all its individual parts, and replacing such as are out of order, or by directly applying his manual skill and tools to those needing such application. One who would repair the

human machinery has not all the advantages and facilities of the machinist. Not being able to take the human frame apart nor to replace any vital portion of it, the operator is confined to more indirect and, therefore, more difficult means of ascertaining the cause of the trouble. After this knowledge has been more or less correctly obtained, the choice of the proper remedy is made still more difficult from the fact that in many instances it cannot be applied directly to the part needing help, but must be used indirectly through other parts of the machinery which may themselves not need any repair and, indeed, may be injured by the very remedy which will best help the part for which it was intended. It also may be necessary to apply several different remedies in combination, the individual characters of which are not such as to bear this combination. It will thus be seen that as much skill is required to prepare the remedies for the ills of mankind as for their picking out. When any one person combines all the qualifications of being able accurately to detect the cause of trouble, to select the best remedies, and to properly combine them and so well manage the whole conduct of the necessary repairs as to quickly and successfully restore the normal condition of the human machine, we call that person a skillful physician. As has been shown, even such a man must depend largely upon the remedies he employs, and therefore every aid he can get from the skill and experience of others is of great value to him. From the ordinary druggist he can only expect common honesty, manual skill, intelligent and faithful obedience to his directions for compounding the various ingredients he may order to be mixed, and if he gets these in the way of fresh drugs, properly prepared of the standard strength, skilfully combined, he has obtained all he can expect. If, in addition to this aid, he can obtain remedies already combined from the best, freshest and thoroughly tested materials, in a form which is palatable and which excludes any chance of ingredients being included which produce an injurious chemical change, he has an additional advantage. A still greater source of help would come from this combination having by long experience been proven to be best adapted to the difficulties he is trying to remedy. It is just here where the reputation, skill, experience, capital, appliances and facilities of the scientific pharmaceutical manufacturer comes into play. Any remedy which has been thoroughly tested by the medical profession and found efficacious is obtained and combined in the form best adapted and ready for use by such houses as, for instance, Parke, Davis & Co., of Detroit, so that when ordered by the physician he is sure of exact results, without the risk of any intervening obstacle in quality or combination and at a price much below that which the ordinary pharmacist would have to charge for a supposed similar article, while the retail druggist really makes as much profit with less labor on such a sale as he would on the sale of a compounded prescription. This article has already exceeded the usual limits. We will therefore reserve further consideration of the subject until another time.

FELT TOOTH BRUSHES.

Any great innovation is bound to excite both the antagonism of those whose interests it assails and the antipathy which results from the threatened breaking-off of long-continued habits. The latter cause is but too apt to influence the judgment in passing upon the merits and demerits of a new discovery or invention. These were the thoughts suggested to the writer in examining the latest addition to the daily toilet, the Ideal Felt Tooth Brush. It consists of a handle with a long metal loop at the end, serving as a frame, in which is securely held a narrow block of fine compact felt, whose face is curved to conform to the curve of the gums and cut into flat angles like saw-teeth. On applying it the user is at first disappointed. No matter how new the felt or how strong the pressure of the hand, it does not excite the most sensitive tooth nor irritate the gums and palate. It cleanses the teeth, and through the edges reaches the sides and angles where the bristles of the old-fashioned brush do not penetrate. It polishes the enamel rapidly and easily, and when aided by a good dentifrice removes tartar, tobacco stains, iron marks, blackberry and whortleberry stains without difficulty or trouble. In all of these regards it is far superior to the bristle brush. The latter does good, but also does harm. In many cases it does far more evil than benefit. The hard horny bristles scratch and groove the enamel until at last the dentine is exposed, when, of course, decay sets in with pain and misery. The bristles irritate the gums, which recede until the roots are bared, when decay of a far more serious nature begins its lamentable work. Frequently teeth are so scratched and channelled in this manner that they come to resemble girdled trees, and like these they break off and are lost. For this reason Dr. Flagg of Philadelphia said—"I think it not too strong ground to take that bristle brushes do infinitely more harm than good." Similarly Dr. Cook, a famous Brooklyn dentist, said—"While bristle brushes, when soft and properly used, are of great benefit to many people, yet it may be seriously questioned whether they have not on the whole been of injury to civilized people." When a bristle brush has been used a short while the hairs lose their parallel set and become loose. A brush of this sort should be immediately thrown away. The stragglers are apt to perforate the cheeks, gums and palate, and by carrying small pieces of food from between the teeth to poison the minute perforations. A loose bristle is liable also to be carried by the breath into the windpipe or the lungs, or with the saliva into the stomach. With the felt it is different. It does not come apart, nor does abrasion make any appreciable loss of substance. It cannot perforate, scratch or make sore any epithelial tissue whatever; neither can it interfere with the respiratory or assimilative organs. It has another advantage over bristles in its exemption from the chemical action of ptyalin, the essential principle of the saliva. Bristles are changed by this powerful element and become dry, hardened and brittle. They are even changed in color, and from white and yellowish white assume a grayish, brownish or other unsightly hue. Fine felt undergoes no perceptible alteration from the saliva, and after a month's daily use seems to suffer no chemical action. As regards wear, the felt brush is far superior to the bristle. The latter seldom lasts a month before it is in a condition apt to inflict injury. In two months its usefulness is gone, and its only place is the ash-barrel. With the felt brush the felt lasts from one to three weeks, and then can be replaced by a new block. The handle and metal hoop are almost indestructible, so that from an economic standpoint a felt brush is not one-tenth so dear as any other. In conclusion, it may be stated that no one who has given the new invention a trial will ever go back to the brush of our fathers. The increased ease and comfort of its use, the greater polish, health and beauty of the teeth, and the improved condition of the gums will in a few days at the furthest make the bristle brush distasteful and repugnant. Added to this the freedom from the scratches, punctures and sores produced by deranged bristles, the absence of all tickling in the throat and tonsils, of coughing and painfulness resulting from loose ones, and above all, the neatness, convenience and economy of the new system, and it is easily seen that the days of the bristle brush are numbered, and that before long the felt brush will be in universal use.

A NEW FIBRE.—A new vegetable fibre, called "gamootic," is imported from Celibes into Holland, and is made to take the place of moss in upholstery.

Horsford's
ACID PHOSPHATE.

A preparation of the phosphates of lime, potash, magnesia and iron, and phosphoric acid, in solution, that is readily assimilated.

Especially recommended in all cases where the use of phosphoric acid or the phosphates is indicated, such as exhaustion of the physical, nervous and cerebral systems, gastric and liver derangement, gravel, and other calcareous deposits, cholera, scurvy, consumption, etc.

As a menstrum for the administration of strychnina, morphina, quinina, and other organic bases which are usually exhibited in acid combination, it is unsurpassed.

It makes a delicious drink with water and sugar only, and harmonizes with such stimulants as are necessary to prescribe.

Dr. G. F. WILBER, Nashua, N. H., says: "It is a very elegant method of using phosphorus."
Dr. T. C. SMITH, Charlotte, N. C., says: "I attach the highest importance to it as a therapeutic agent, of well-defined and specific value."
Dr. C. EARLE, Pontiac, Mich., says: "I do not hesitate to recommend it to the confidence of the profession."
Dr. T. B. PORTER, Freeport, Ill., says: "It is an excellent therapeutic agent."
Dr. I. W. MARTIN, Des Moines, Ia., says: "I take pleasure in adding my testimony as to its therapeutic value."
Dr. E. BROWN, Omaha, Neb., says: "I find it a very useful remedy."

Send for descriptive circular. Physicians who wish to test it will be furnished a bottle on application, without expense, except express charges. Prepared under the direction of Prof. E. N. HORSFORD, by the

Beware of Substitutes and Imitations. **RUMFORD CHEMICAL WORKS, PROVIDENCE, R. I.**

OATS AND THEIR MEDICINAL VALUE.

In 1881 Dr. B. Keith, the head of the firm of B. Keith & Co., introduced what he called "*Con. Tinc. Avena Sativa*," which he had originally prepared for his own use to treat paralysis. He recommended it as a powerful nerve stimulant, tonic, etc. Dr. E. M. H. Sell brought this new preparation to the notice of the medical profession for the treatment of the opium and morphine habit. It is made from oats upon the same principle as all of the Keith concentrated tinctures, by first obtaining the active principle by precipitation, and then dissolving this precipitation in given quantities to make the concentrated tincture, which is the surest way of obtaining uniform strength. The general favor which this preparation has met with resulted in a host of imitators calling their wares by similarly sounding names, or boldly call them oats essence, and recommending them as efficacious in not only those diseases in which Con. Tinc. Avena Sativa was indicated, but in every disease human flesh is heir to. Like all good things imitated, Keith's Con. Tinc. Avena Sativa has steadily grown in favor, and all assaults made upon it, and they have been numerous, have recoiled upon the heads of those making them. We shall have more to say upon this subject after we have finished some experiments we are now making.

SALAD DRESSING.

The old firm of Horton, Cato & Co., of Detroit, prepare what they call the Royal Salad Dressing, which we have carefully examined and found to be made from pure materials, well compounded so that it remains fresh and does not separate or turn oily and disagreeable. It contains no injurious substances and furnishes a ready-made fine flavored dressing for salads, etc.

STERLING BAKING POWDER.

In this age of time and labor-saving ideas, there has been no field so small, unimportant or out-of-the-way, but what has been reached and bettered by inventive genius. Even the kitchen and dining-room have been thus invaded and their regime improved. The old system of bread and cake making with yeast, hard muscular labor and long waiting has been almost driven to the wall by the new one of baking powders. It may surprise the reader to know that there are at least sixty different kinds of baking powders in the market, of which at least thirty are sold by hundreds of thousands of boxes. It is generally supposed that there is a vast deal of "adulteration" in baking powder; but since there is at law no standard of excellence or purity in baking powders, it is difficult to say what is an adulteration, unless it be an unhealthful ingredient. But there is an immense difference in the value and efficiency of different brands. As a matter of fact, any powdered composition that is healthful, and which in solution in moist dough will generate carbonic acid gas and "raise" bread, or cause it to be porous and light, may be properly called a baking powder. And accordingly we find very many varieties or brands of baking powders on the market made from widely different materials. The best baking powder is of course that in which (the ingredients being healthful) the largest amount of carbon gas is generated to the spoonful of powder, and the least amount and least hurtful character of the resultant salt remains in the bread. Baking powders may be classified as cream of tartar baking powders, phosphate baking powders and alum baking powders.

Of the cream of tartar powders, not one that is known is bad. All are quite healthful, well made and efficient. Examinations by the official chemists of this and other States show that not a single brand that has been carefully analyzed contains any deleterious ingredients whatever. The Sterling Baking Powder is one of the best cream of tartar powders, and upon analysis was found to possess good leavening power, and to be perfectly pure. It has over 11 per cent. of carbonic acid gas.

When it is recalled that nine-tenths of all baking powders do not give out more than 10 per cent. of carbonic acid gas when fresh, and less than 8 per cent. after they have stood a long while, the remarkable strength and efficiency of the Sterling is immediately perceived. So far as purity is concerned, it would be futile to claim superiority on the part of any cream of tartar powder. All are upon the same level in this regard, and so fierce is the competition no manufacturer can afford to adulterate or to use impure materials.

REMOVING BIRTHMARKS.

Physicians throughout the country are beginning to give more and more attention to the subject of dermatology. A few years ago it was a very popular belief that a birthmark could by no possible means be eradicated from the skin. We have only to go back a very short time to recall dramas in which the villain was tracked from town to town and eventually handed over to outraged justice through a scar or birthmark which revealed his identity. A drama built on such a foundation would meet with well merited ridicule to-day. The villain would not be such a fool as to permit a facial disfigurement to advertise his personality. He would make short work of it by having it removed, and his changed appearance would then prove his impenetrable disguise. In ten days a person afflicted with a mortifying birthmark, with a pimple or with red nose, could have any one of these disfigurements completely removed. The science of dermatology has not advanced at a snail's pace. It has run the race of the hare, but has not paused within sight of the goal. Able physicians have brought to this science all the wealth of their experience and knowledge, and if any one suffers to-day through facial blemish it is his or her own fault. Foremost among those who have made undeniable triumphs in dermatology is Dr. John H. Woodbury, whose magnificently furnished parlors at No. 37 North Pearl street, Albany, N. Y., are daily filled with people who apply to him for relief from birthmarks, moles, superfluous hair on the face, and kindred disfigurements. Dr. Woodbury revolutionized the science. He advanced the extremely radical opinion that birthmarks or moles should be treated by penetration; that they could be reduced to such a state that it would take on a scab, and that when the scab fell the birthmark, or whatever the disfigurement might be, would necessarily disappear. This was a sweeping declaration, and old forms and practices were shattered by it. Yet it was a true solution of the riddle. He uses no scalpel; nothing more than a harmless lotion, which changes the birthmark into an ordinary scab. Many of the most eminent society people of the metropolis, who had been for years debarred from public life through a disfigurement of the face, testify every day to the success of the doctor's methods.

ALDEN'S MANIFOLD CYCLOPEDIA.

The Sixth volume of Alden's Manifold Cyclopedia extends from Bravo to Calville, its 635 nicely printed pages including 120 illustrations. Along with its manifold number of words and topics treated briefly, there are many extended articles, as for instance, Brazil, seven pages; Breach-loading Guns, eleven pages; Bridge, eleven pages; British Museum, ten pages; Brooklyn, five pages; Buddhism, fifteen pages; and California, sixteen pages. The Cyclopedia well deserves the enthusiastic commendation it is receiving from all sides; it is certainly *THE* Clycopedia for popular use. Its small handy volume, contrasting so greatly with the usual bulky, unwieldy volumes adopted by publishers of Cyclopedias, is a very pleasant characteristic, and undoubtedly adds greatly to the usefulness of the work.

NEW EXPLOSIVE.—The latest addition to the list of high explosives is called carbo-dynamite. It is composed of ninety parts of notro-glycerine absorbed by ten parts of a variety of carbon. A London paper gives an account of some experiments with it, which seem to show that it possesses several important advantages over ordinary dynamite; among others, considerably greater power, and the generation of much less noxious vapor when exploded in confined places. It is claimed also to be entirely unaffected by water.

Ask Grocers for our Patent Barley **CRYSTALS**, a new, unrivalled Cereal Food, for Breakfast Tea & Dessert. If not sold there, write us for free samples. **GLUTEN FLOUR** and **SPECIAL DIABETIC FOOD** are invaluable waste-repairing flours for **Dyspepsia, Diabetes, Debility & Children's Food.** No bran; mainly free from starch. For all family uses nothing equals our **HEALTH FLOUR.** Send for circular offering 4 lbs. free.
FARWELL & RHINES, Props., Watertown, N.Y

OUR SPECIALTIES ARE

Choice Bottled Ciders

—AND—

Pure Cider Vinegar,

For Hotel and First-Class Trade.

T. P. ROGERS & SON,

370 to 376 Washington Street,

NEW YORK.

Good Agents

To obtain Subscriptions for

AMERICAN * ANALYST

WANTED ON LIBERAL TERMS.

Natural Lithia Water.

FARMVILLE LITHIA WATER

FROM VIRGINIA.

—Not only Relieves, but—

CURES

Bright's Disease, Kidney Troubles of all Kinds, Rheumatism, Rheumatic Gout, Dyspepsia, Bladder Troubles, Diabetes, Calculi, Albuminuria. Without Taste or Odor. An Unapproachable Record in Results.

Sold by HAZARD, HAZARD & Co., Fifth Avenue Hotel, and other first-class Pharmacists. Pamphlet free upon application.

FARMVILLE LITHIA SPRINGS CO.,
398 Broadway, New York, and Philadelphia.

Subscriptions $1 per year. Now is the time to subscribe.

CALIFORNIA

Fine Table Wines

From our Celebrated Orleans Vineyard.

Kreuzkamp & Co.

Producers of the

ECLIPSE

CHAMPAGNE.

530 Washington St.
SAN FRANCISCO.

PARK & TILFORD. New York, C. JEVNE & CO., - - Chicago, } Agents.



FACIAL BLEMISHES.

the Largest Establishment in the World for their Treatment. Facial Development, Hair and Scalp, Superfluous Hair, Birth Marks, Moles, Warts, Moth, Freckles, Wrinkles, Red Nose, Acne, Pimples, Bl'k Heads, Scars, Pitting, etc., and their treatment. Send 10c. for book of 50 pages, 4th edition.
Dr. JOHN H. WOODBURY,
37 North Pearl St., Albany, N. Y.
Established 1870. Inventor of Facial Appliances, Springs, etc. Six Parlors.

$85 Solid Gold Watch Free !

This splendid, solid gold, hunting-case watch, is now sold for $85; at that price it is the best bargain in America; until lately it could not be purchased for less than $100. We have both ladies' and gents' sizes with works and cases of equal value. **ONE PERSON** in each locality can secure one of these elegant watches absolutely **FREE.** These watches may be depended on, not only as solid gold, but as standing among the most perfect, correct and reliable timekeepers in the world. You ask how is this wonderful offer possible? We answer—we want one person in each locality to keep in their homes, and show to those who call, a complete line of our valuable and very useful HOUSEHOLD SAMPLES; these samples, as well as the watch, we send ABSOLUTELY FREE, and after you have kept them in your home for 2 months, and shown them to those who may have called, they become entirely your own property; it is possible to make this great offer, sending the **Solid Gold Watch** and large line of valuable samples FREE, for the reason that the showing of the samples in any locality, always results in a large trade for us; after our samples have been in a locality for a month or two, we usually get from $1,000 to $5,000 in trade from the surrounding country. Those who write to us at once will receive a great benefit for scarcely any work and trouble. This, the most remarkable and liberal offer ever known, is made in order that our valuable Household Samples may be placed at once where they can be seen, all over America; reader, it will be hardly any trouble for you to show them to those who may call at your home, and your reward will be most satisfactory. A postal card, on which to write us, costs but **1** cent, and if, after you know all, you do not care to go further, why no harm is done. But if you **do** send your address at once, you can secure, FREE, AN ELEGANT **$85,** SOLID GOLD, HUNTING-CASE WATCH and our large, complete line of valuable HOUSEHOLD SAMPLES. We pay all express, freight, etc.

Address, STINSON & CO., BOX 356 PORTLAND, MAINE.

LEA & PERRINS' SAUCE.

Lea & Perrins', the original and genuine Worcestershire Sauce, has been before the public over a half a century. Like all popular favorites it has long been the standard of comparison and the pattern for counterfeiters who not being able to imitate its excellence offer to the public imitations in bottling, labels and style of putting up. They dare not counterfeit the signature of Lea & Perrins which is on the red label of every genuine bottle, and of which this is a facsimile.

Lea & Perrins

To be sure of obtaining the genuine article, see that the above signature is on the label.



BLAIR'S PILLS

Great English Remedy for Gout, Rheumatism and Kidney Complaints.

Sure, Prompt and Effective. Oval box 34, round box 14 pills. At all druggists, and 224 William St., New York.

"ROYAL" SALAD DRESSING,

PURE AND WHOLESOME.

Always Fresh, does not turn Oily or Rancid.

"ROYAL" WORCESTERSHIRE SAUCE,

The Peer of American Manufacture.

PURITY. TRADE MARK EXCELLENCE.

"CROWN" CELERY SPICES, TOMATO CATSUPS.

Pure Flavoring Extracts, Etc.

HORTON, CATO & CO.,

SOLE PROPRIETORS & MANUFACTURERS,

DETROIT, MICH.

A RICH PRESENT FOR YOU !

We have purchased for one-fourth the original actual cost, a large quantity of elegant Papeteries, each one filled with the very choicest quality of **Fashionable Linen Note Paper and Envelopes,** in beautiful assorted tints, with pens, penholder, sealing wax, etc., to match. The regular retail price of some of these Papeteries is $3.00, others are worth $1.50 to $2.50 each, while the cheapest one has never been sold at less than 50 cents, and a great bargain at that price. They are all very handsome and really valuable. We shall, for the next two months, send one of these Papeteries, carefully packed and fully post-paid, to every one who sends us **ONLY ONE DOLLAR** to pay for a full year's subscription to **DRAKE'S MAGAZINE.** The best Papeteries will be sent to those who subscribe first, and it will be **"First come best served."** All subscriptions will begin with the latest number out. **DRAKE'S MAGAZINE** is 64 pages and handsomely bound, each number is complete in itself, and has from 15 to 25 handsome illustrations. It has special departments to interest ladies and children, and entertaining matter for everyone. Every article in it is written expressly for it by the best authors. No other magazine of equal value is sold at less than 20 cents per copy, or $2.00 per year, yet we will send you **DRAKE'S MAGAZINE** a whole year and a **BEAUTIFUL PAPETERIE** filled with fashionable Stationery, all for **One Dollar.** A one dollar bill will go safely in the mails. Cut this advertisement out. It may not appear again. Address, DRAKE'S MAGAZINE,

31 Mercantile Exchange, New York City.

MALTED MILK

THE ONLY FOOD

For Infants and Invalids

THAT CONTAINS ALL THE ELEMENTS OF NUTRITION, WITHOUT A SINGLE ADDITION.

MALTED MILK does not have to be cooked.

MALTED MILK needs no addition of milk, only to be stirred up with water, which can be done without the slightest fuss or trouble.

MALTED MILK will not spoil in hot weather.

MALTED MILK is always ready for immediate use night or day, when traveling or at home.

MALTED MILK does away with the danger of using sour or impure milk.

MALTED MILK is free from starch and cane sugar All foods that have to be cooked contain starch.

Ask your physician his opinion of **MALTED MILK;** he knows all about it.

Price, . . . 50 Cts. | Large Size, . $1.00

Extra Large Glass Jars for hospital and family use, ... $3.75

These contain five times the quantity of the $1.00 bottles.

A sample bottle will be sent free to any Mother or Invalid sending their address to

MALTED MILK CO.

RACINE, WISCONSIN, U. S. A.

ON THE USE OF PURGATIVES.

BY CHARLES A. HOFF, M. D., ST. LOUIS, MO.

Of all preparations contained within the *pharmacopœia,* there are none, apparently, held in higher esteem by mankind than that class of medicines, commonly known as purgatives. The busy practitioner confidently prescribes them with variable frequency, singly and combined, from the date of the writing of his very first prescription to that of his last; and the corner druggist rarely sees a day pass over his head on which he does not greet the customer who has called around to get "something to act upon his bowels." Indeed, the inevitable purgative awaits the tiny baby screaming in its first attack of colic; it is resorted to by the invalid weighted down with years of suffering and disease; and it is by no means despised by the individual in robust health, when assailed by the various petty ills, which even the most vigorous seldom entirely escape.

Notwithstanding the fact that purgatives are so generally prescribed by the physician, and so frequently resorted to without advice by the patient, they are not altogether incapable of doing harm. As everybody knows, the habit of purging the system repeatedly with salines, cholagogues, hydragogues, or drastics, is a most pernicious one; and the physician who fails to exercise a proper care, both in the selection and the administration of cathartics will sooner or later bankrupt the health of his patients as well as his own hard earned reputation.

Constipation is a complication of so many disorders, a symptom of so many diseases that its treatment in different cases depends upon very different considerations. For a simple, ordinary attack, the average doctor has been accustomed to use a simple purge, such as castor oil, sulphate of magnesia, rhubarb, senna, aloes, colocynth, blue pills, etc.; yet in none of these, can it be truly said, has there been found all that could be wished for, even in so simple a matter as a laxative. Where can we find the physician who has not been vexed and annoyed at the complaints of his patients against the purgative medicines he has been accustomed to prescribe. Some people there are who can not or will not swallow pills; many object to the nauseating castor oil; not a few oppose the use of salines since they are disagreeable both in taste and effect; many look upon all resinous cathartics as objectionable on account of their so called heating properties; aloes is objected to in pills and especially in pregnancy; elaterium is said to be excessively harsh and severe, croton oil is known to be dangerous; podophyllin causes an undue amount of griping; blue mass is avoided on general principles; and so on to the end of the chapter.

Fortunately, however, the physician of the present need no longer be placed in a dilemma when called upon to prescribe a preparation free from the faults enumerated in connection with ordinary purgatives. The pharmacist has bravely come to his aid with a formula of incomparable excellence; and this preparation, a combination of "manna, purified cathartic acid and fruit juice," although but recently brought to the notice of the medical world, is, nevertheless, already regarded as a most valuable addition to the resources of medicine.

The happy thought that suggested the combination known as the Rio Chemical Co.'s Acid Mannate justly challenges unlimited admiration and esteem, and has thus far evoked from the profession an almost universal verdict of commendation and praise. Prompt, mild and certain in its action, Acid Mannate may well be considered an ideal remedy in the constipation of pregnancy. Being pleasant to the taste, and continuing its good work without increased dosage, it is pre-eminently adapted to cases of habitual constipation. Indeed, in its wide range of adaptability as an aperient medicine it is impossible to exaggerate its importance, or allude either directly or indirectly to the vast variety of its beneficial, therapeutical properties.

The importance of laxatives is probably nowhere appreciated so much as in the constipation of pregnancy; and it is to this fact, no doubt, more than to any other, that Acid Mannate owes its great popularity and fame among remedial agents. The testimony of thousands of honorable medical gentlemen leading us to believe that, through the beneficent effect of this same elegant formula, constipation need not hereafter, as in the past, be regarded as one of the most troublesome attendants upon gestation. Moreover, the atrocious female pill of unknown composition but of dire effect, which has deluged the drug market for ages, we may consider as having had its day; and it is to be hoped that, since the physician is now in possession of a purgative especially suited to the period of gestation, female life will be less frequently harassed by the ails and aches said to be peculiar to the sex; and that miscarriages, displacements, granular erosions, congestions, headaches, dyspeptic and hypochondriacal attacks, and the whole long train of aches, pains and nervous ills will grow less familiar to the medical profession in the same ratio that the physician increases his familiarity with the actions of Acid Mannate.

A full sized bottle of Acid Mannate will be sent free to any Physician who desires to test it, if he will pay the express charges and mention this Journal, on application to the

RIO CHEMICAL CO.,
St. Louis, Mo

J. HENRY HENTZ. J. P. ROBINETT. J. HENRY HENTZ, Jr.

ESTABLISHED 1798.

WHITE, HENTZ & CO.,

SOLE PROPRIETORS OF

Trimble and Pennsylvania Monogram Whiskies.

222 and 224 NORTH SECOND ST., PHILADELPHIA.

D. LIEBER, 17 South William St., New York. Col. H. A. SELIGSON, 1200 Pennsylvania Ave., Washington, D. C.

POLICE DEPARTMENT,

CITY OF NEW YORK.

MESSRS. ADAMS & SONS:

It gives me pleasure to add my testimonial, in behalf of your "TUTTI FRUTTI" CHEWING GUM, to your collection.

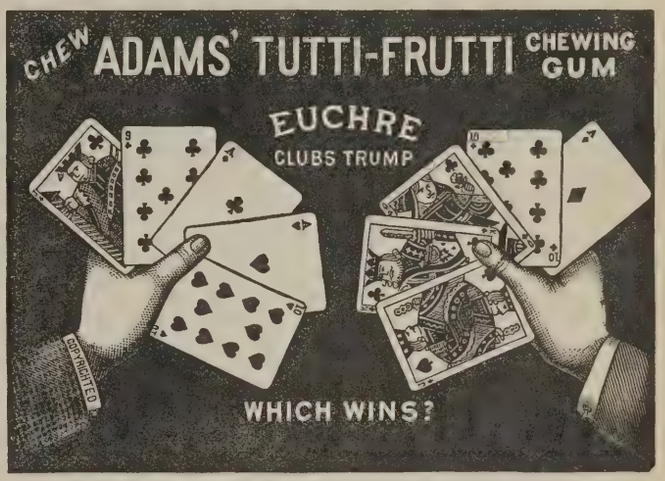
Superintendent Murray and myself were *recommended by Dr. CYRUS EDSON to try your Gum for a form of indigestion* from which we were suffering. At first it seemed to us a ridiculous remedy, but I am happy to say that its effects thoroughly justified the Doctor's recommendation.

I would add that I have rarely taken a more pleasant medicine.

Yours, very truly,

HENRY V. STEERS,

Inspector of Police.



GOLD You can live at home and make more money at work for us than at anything else in the world. Either sex; all ages. Costly outfit FREE. Terms FREE. Address, TRUE & CO., Augusta, Maine.

TO ADVERTISERS!

FOR a check for $20 we will print a ten-line advertisement in One Million issues of leading American Newspapers and complete the work within ten days. This is at the rate of only one-fifth of a cent a line, for 1,000 Circulation! The advertisement will appear in but a single issue of any paper, and consequently will be placed before One Million different newspaper purchasers; or FIVE MILLION READERS, if it is true, as is sometimes stated, that every newspaper is looked at by five persons on an average. Ten lines will accommodate about 75 words. Address with copy of Adv. and check, or send 30 cents for Book of 256 pages.
GEO. P. ROWELL & CO., 10 SPRUCE ST., NEW YORK.

We have just issued a new edition of our Book called "Newspaper Advertising." It has 256 pages, and among its contents may be named the following Lists and Catalogues of Newspapers:—
DAILY NEWSPAPERS IN NEW YORK CITY, with their Advertising Rates.
DAILY NEWSPAPERS IN CITIES HAVING more than 150,000 population, omitting all but the best.
DAILY NEWSPAPERS IN CITIES HAVING more than 20,000 population, omitting all but the best.
A SMALL LIST OF NEWSPAPERS IN which to advertise every section of the country: being a choice selection made up with great care, guided by long experience.
ONE NEWSPAPER IN A STATE. The best one for an advertiser to use if he will use but one.
BARGAINS IN ADVERTISING IN DAILY Newspapers in many principal cities and towns, a List which offers peculiar inducements to some advertisers.
LARGEST CIRCULATIONS. A complete list of all American papers issuing regularly more than 25,000 copies.
THE BEST LIST OF LOCAL NEWSPAPERS, covering every town of over 5,000 population and every important county seat.
SELECT LIST OF LOCAL NEWSPAPERS, in which advertisements are inserted at half price.
5,472 VILLAGE NEWSPAPERS, in which advertisements are inserted for $42.15 a line and appear in the whole lot—one-half of all the American Weeklies
Book sent to any address for THIRTY CENTS.

THE FINEST MADE
COLBURN'S
PHILADELPHIA
MUSTARD
KING OF CONDIMENTS

OPIUM AND LIQUOR HABIT CURED.

WE solicit an investigation of our system and methods, and will gladly send to any one very interesting matter on the OPIUM HABIT DRUNKENNESS and their effects and cure. Physicians specially invited to examine, and if desirous of trying our remedies, liberal arrangements will be made with them.

THE LESLIE E. KEELEY CO., Dwight, Illinois.

ESTERBROOK'S STEEL PENS

Leading Numbers 14,048,128 130, 135, 333, 161.

ESTERBROOK & CO. FALCON PEN

For sale by all stationers.

THE ESTERBROOK STEEL PEN CO., 26 John St., N. Y.
WORKS CAMDEN, N. J.



These Goods are "Par Excellence,"

Pure, Healthful and Reliable, warranted to give satisfaction in every particular.

For sale by wholesale and retail grocers throughout the United States. VOUWIN BROS., Manufacturers, CLEVELAND and CHICAGO.

A BUSINESS BENEFIT.

ADVANTAGES TO ADVERTISERS OFFERED BY THE AMERICAN ANALYST.

It has not the limitations of a daily paper. No one reads yesterday's paper. A monthly lives at least a month, while a semi-monthly is fresh twice a month, and its audience is not limited by geographical lines, but the circulation is all over the United States and Canada.

It contains matters of interest to everyone, especially the ladies of the household, and is, therefore, sure of a careful perusal. Our audiences are intelligent and of the better classes, who have money to spend, and any well worded advertisement in our columns, giving real information, will receive a careful perusal.

Our rates are as low as our circulation affords. Large circulation and original matter cost money, and those advertisers who desire to realize these benefits must expect to pay reasonably for them.

Advertisements in our columns are permanent. Most of our subscribers bind their numbers.

Our advertisements are set up in an attractive form, sure to call the attention of the reader.

Anything that our readers want, or for which a demand is to be created, not wholly of a local nature, will pay to advertise with us.

We take only advertisements from legitimate houses of really meritorious goods, and give them all the editorial assistance they deserve; consequently our readers knowing this, have confidence in advertisements contained in our columns.

The fact that we have the best and largest houses in every branch of trade advertising with us, and that they always renew as their seasons arrive, proves beyond a doubt that they have found the AMERICAN ANALYST a good advertising medium. Why should not you?

PEACOCK'S BROMIDES

(SYR: BROM: COMP: PEACOCK)

NERVE SEDATIVE.

Each fluid drachm represents 15 grains of the Combined C. P. Bromides of Potassium, Sodium, Calcium, Ammonium and Lithium.

USES:—EPILEPSY, and all CONGESTIVE, CONVULSIVE, and REFLEX NEUROSES.

This preparation has stood the test of time and experience, and can be relied upon to produce results, which can not be obtained from the use of commercial bromide substitutes.

DOSE:—One to two FLUID drachms, in WATER, three or more times a day.

PEACOCK CHEMICAL CO., St. Louis.

CARL L. JENSEN'S
CRYSTAL PEPSIN TABLETS



FOR DYSPEPSIA OR INDIGESTION.

CARL L. JENSEN'S CRYSTAL PEPSIN has been known throughout the world for the last ten years among the medical profession only. But a medical preparation of such high value as this could not be kept exclusively within the power of the physicians without permitting the public to become familiar with CARL L. JENSEN'S CRYSTAL PEPSIN, which they have so often seen mentioned in prescriptions from their physicians, and from which preparations they have received such gratifying results. That the public have availed themselves of this knowledge is manifested from the fact that the demand at the drug stores of late for CARL L. JENSEN'S CRYSTAL PEPSIN has become so urgent that we have been repeatedly requested by the Druggists at large to put up the PEPSIN in a more convenient form for their customers who demand JENSEN'S CRYSTAL PEPSIN without bringing a prescription. This PEPSIN, to suit the prescription department, is put up in loose Crystals or Scales, and therefore not in a suitable manner to be handled by the public. It is therefore, for the convenience of the public, prepared in tablet form, of which one or two constitute a dose, and put up in small bottles of convenient form to be carried in the pocket, each bottle containing seventy-five tablets.

CARL L. JENSEN,

SOLE MANUFACTURER,

2039 Green Street, Philadelphia, and 161 West 23d Street, New York.

KEPT BY ALL DRUGGISTS.



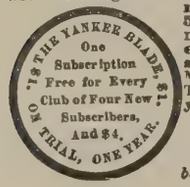
ESTABLISHED 1841.

THE GREAT AMERICAN STORY PAPER, —THE— ---YANKEE BLADE---



FREE TO SUBSCRIBERS.

This wonderful family story paper is read every week by 400,000 people. It is a large, eight-page paper, every page filled solid full of interesting reading; stories of thrilling interest, adventure, love, the sea, detective tales, fireside stories, etc. Special articles on the Household Department, Ladies' Work, Boys' and Girls' Departments. The Famous Funny Columns of THE YANKEE BLADE are edited by SAM WALTER FOSS, the celebrated humorist. The circulation is rapidly increasing. Endorsed by the best people as suitable for everybody to read. Its reading matter is pure, and devoid of the slightest tinge of vulgarity. Don't fail to try THE YANKEE BLADE. You will be delighted with it. Comes every week. Our regular subscription price is $2 00 per year. **We offer it to new subscribers for only $1.00 a year, or 50 cents for six months.** We will send it three months for 25 cents. **If you will enclose 6 cts. extra, and mention this paper, we will send you FREE a Half Dozen Japanese Shifu Handkerchiefs** of Mikado paper, fibre silk, nearly half a yard square, in handsome designs, assorted. This is one of the greatest offers ever made by any reliable firm. Send at once. **Sent 2 years for $1.75.** THE YANKEE BLADE is for sale at all newsdealers, for 5c. per copy.

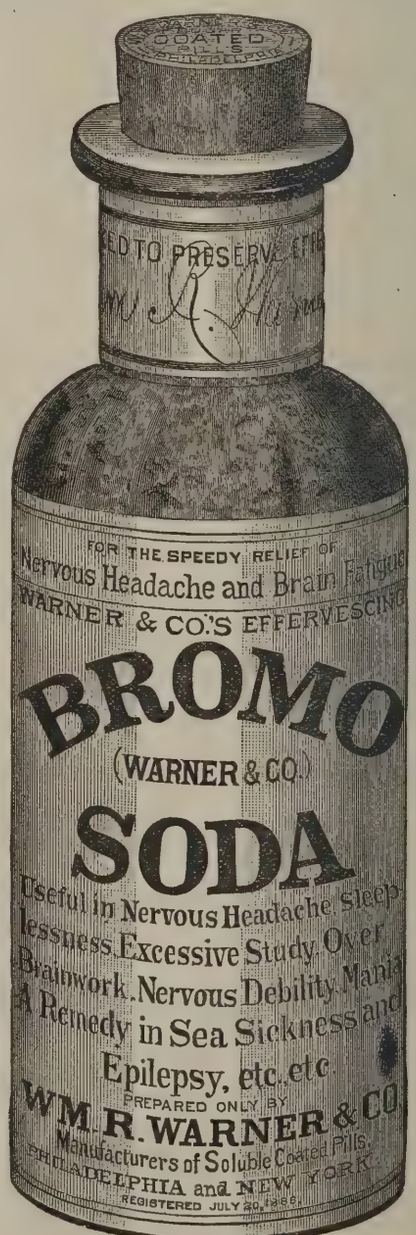


POTTER & POTTER, Pubs. Yankee Blade, Boston, Mass.

We have examined the above-named paper and Japanese handkerchiefs, and find them to be a remarkable bargain. We can recommend them to all our readers.—Editor.

FOR THE ILL-EFFECTS — OF — Summer Heat, Heat Exhaustion.

Where after a prolonged exposure to a heated atmosphere you feel exhausted, depressed and tired mentally as well as physically, take a dessert spoonful of Bromo-Soda in half a glass of water, and drink while effervescing, when relief will be sure to follow.



A Cure for Sick Headache, Sleeplessness, Etc.

ASK FOR BROMO-SODA and TAKE NO SUBSTITUTE.

THE TORSION

Braided Wire Mattress.

At all times a thoroughly ventilated and perfectly clean mattress, it cannot absorb odors, or retain exhalations or disease germs.

D. HAYES AGNEW, M. D., Prof. of Surgery, University of Pennsylvania, says:

"The Torsion Braided Wire Pillow and Mattress I regard as superior to anything of the kind now in use; well suited for either private or hospital use.

Prof. WM. H. PANCOAST, late Professor of Anatomy, etc., in Jefferson Medical College, now Professor of Anatomy and Clinical Surgery in the Medico-Chirurgical College of Philadelphia Hospital Surgeons, says:

"I have used in my surgical practice your Braided Wire, in the form of mattresses, pillows for the head and body, and short pillows for the arm and leg when injured. I find them most admirable, cool and light, yet affording perfect and elastic support.
I have saved a patient from bed sores by the use of the Braided Wire mattress."

WM. H. FORD, President Board of Health, Philadelphia, says:

"I have used the Torsion Braided Wire Mattress with great satisfaction, it is light and therefore easily handled; it is elastic and very comfortable. The case can be easily removed to afford a complete airing, a feature of great importance from a health point of view.
It is an invention of great usefulness.

For descriptive circular and price list, send to

The Torsion Braided Wire Upholstering Company,

1017 CHESTNUT ST., PHILA.

"BILLET"

are

Carefully Selected

French Sardines,

Packed in Choicest Olive Oil.

AT ALL LEADING GROCERS.

Any Retail Druggist in the United States who desires to obtain Advertising Matter, Show Cards, Signs, etc., which will assist and instruct him in the sale of Harriet Hubbard Ayer's Recamier Toilet Preparations and Vita Nuova, should address THE RECAMIER MFG. CO., 52 and 54 Park Place, New York City.

UNEQUALLED Ask your Grocer for, and insist on having, **LEA & PERRINS'** Sauce, "The Worcestershire." It is known throughout the whole civilized world as the Best and most Delicious Sauce. **DELICIOUS.**

SCOTCH MARMALADE, Jams, Fruit and Wine, Jellies, &c.
By James Keiller & Son, Dundee.

SCOTCH BISCUITS, Albert, Water, and Oat Cake,
By Robert Middlemass & Son, Edinburgh.

RACAHOUT des Arabes, by De Langrenier, Paris.

BAY WATER, West India, (J. D. S. brand), in cases, one dozen bottles.
Sold by all first-class Grocers.

JOHN DUNCANS' SONS, 43 Park Place, New York. Agents for the United States.

Robert Gordon's

TRADE MARK.

SPICED · SEA · FOODS

(IN GLASS.)

OYSTERS, LITTLE NECK CLAMS, MUSSELL, SHRIMP, LOBSTER, Etc.,

Packed in 8 and 16 oz. Jars. Guaranteed to be strictly Pure.

MADE OF THE FINEST MATERIALS.

—ALSO,—

ROBERT GORDON'S CONDENSED CLAM CHOWDER,

In 3-lb Cans. Cheapest and Best in the Market.

MANUFACTURED BY

JONES, GORDON COMPANY, Limited,

204 West Street, New York.

A GOOD INCOME.

We have enabled several gentlemen and ladies to add largely to their incomes by paying them liberal commissions on subscriptions.

For further particulars, ADDRESS AMERICAN ANALYST,

19 Park Place, New York.

ESTABLISHED 1867.

J. H. CUTTER,

OLD

BOURBON AND RYE WHISKIES.

We are the Sole Owners and Proprietors of this Celebrated Brand of Whiskey.

C.P.MOORMAN & CO. **LOUISVILLE, KY.**

We Guarantee the Superior Quality and Absolute Purity of every Barrel of Whiskey sold by us under this Brand.

W. P. FESSENDEN, Agent for N. E. States, Maryland and Penn., 11 Central St., Boston.

Good Subscription Agents wanted by AMERICAN ANALYST.

NATRONA BI-CARBONATE OF SODA.

(ABSOLUTELY PURE.)



The nature of the raw material from which NATRONA BI-CARBONATE OF SODA is made—viz., kryolith, a mineral containing *pure sodium*—insures a purity and uniformity of product which cannot be obtained from any other known material. In making BI-CARB. SODA from any other raw material, the use of sulphuric acid is a necessity, but none is used in any part of the process of making NATRONA BI-CARB.; hence its entire freedom from the slightest trace of arsenic, which is always present in ordinary soda. It is absolute purity and entire freedom from all traces of *sulphate of soda*, common salt and other impurities, render NATRONA BI-CARB. NEARLY TASTELESS, and being bolted through the finest bolting-cloth, insures the finest stage of division.

To these indisputable facts the attention of CONSUMERS of soda is specially called. They are IMPORTANT, and should influence both those who use and those who sell soda, to buy and sell NONE BUT THE BEST.

The NATRONA BI-CARB. Soda is kept in stock by almost every wholesale druggist and grocer throughout the United States, of whom it may be ordered.

Natrona Bi-Carb. Soda is unequaled by any other brand of English or American Manufacture.

PENNA. SALT MANUFACTURING CO.,

NATRONA CHEMICAL WORKS. PHILADELPHIA, PA.

THE LABORATORY.

To Inventors, Manufacturers and Applicants for Patents

The AMERICAN ANALYST may be consulted upon all matters involving theoretical or applied chemistry. Advice and opinions given. Analyses and assays made. Patents perfected and secured. Terms reasonable.

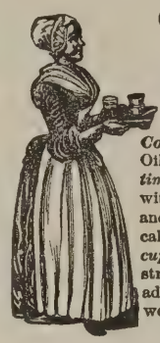
Address, AMERICAN ANALYST,
19 Park Place, N. Y.

ALTHENE SKIN SOAP

An absolutely pure and perfect soap for all purposes of the toilet, nursery, bath or sick-room. Has the approval of leading chemists and physicians, and is recommended by all who have used it. Price 25 cts. a cake, or 65 cts. for a box of three. Can be obtained of the retail druggists or from

J. W. CAMPION & CO., 916 Filbert Street,

PHILADELPHIA.



GOLD MEDAL, PARIS, 18[illegible]

BAKER'S

Breakfast Cocoa.

Warranted *absolutely pure Cocoa*, from which the excess of Oil has been removed. It has *three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup*. It is delicious, nourishing, strengthening, easily digested, and admirably adapted for invalids as well as for persons in health.

Sold by Grocers everywhere.

W. BAKER & CO., Dorchester, Mass.

Sura Cura ROBINSON'S SURE CURE FOR

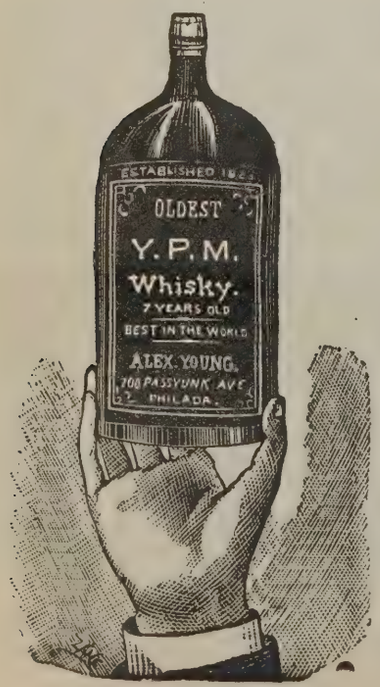
RHEUMATISM

And NEURALGIA,

And remedy for diseases arising from an impure state of the blood. An antidote for **MALARIA.** Price 50 c. and $1. Sent by mail on receipt of price. Send for Circular.

R. W. ROBINSON & SON,
184 Greenwich Street,
NEW YORK.

Sura Cura



ESTABLISHED 1823.

ALEX. YOUNG CO., Limited

DISTILLERS OF

Y. P. M. WHISKIES

DISTILLERY,

Nos. 408, 410, 412 and 414 South Street,

MALT HOUSE,

416, 418, 420, 422 and 424 South Street,

STORE,

No. 700 Passyunk Avenue.

PHILADELPHIA, PA.

KEITH'S

CON. TINC. AVENA SATIVA

(FROM COMMON OATS.)

WITHOUT ADMIXTURE OF ANY KIND.

A Powerful Nerve Stimulant, Tonic, Etc.,

WAS FIRST offered to the medical profession by B. KEITH & Co., in 1881, as a remedy to be employed in the treatment of

Paralysis, Epilepsy, St. Vitus' Dance, the Morphia or Opium Habit, Chloral and Tobacco Habits, Sleeplessness, Nervous Debility and Exhaustion, Neuralgia, Alcoholism Painful and Deficient Menstruation, Headache, Hysteria, Impotency, Convulsions and Prostration from fainting, and in the Convalescent stage of all Acute Diseases.

DOSE.—From ten to thirty drops, or more, as often as may be indicated to meet the urgency of the case. Administer in hot water when quick action is desired.

AN OVERDOSE CAUSES PAIN AT BASE OF BRAIN.

—) WE MAKE ONE QUALITY ONLY (—

Price,

2 oz., 45c.; 4 oz., 75c.; 8 oz., $1.35; 16 oz., $2.50

B. KEITH & CO.,

75 William Street, N. Y.

GILBERT S. GRAVES

STANDARD

STARCH.

MANUFACTURED WITH ENTIRELY NEW MACHINERY AND BY LATEST IMPROVED PROCESS.

IT IS GUARANTEED to be fully equal to BRANDS SOLD AT FANCY PRICES, and MUCH SUPERIOR TO STARCH SOLD AT EQUAL PRICES.

THE MIRROR GLOSS

Is the finest Starch made for the Laundry, and cannot be excelled. It will not injure the finest Laces.

THE CORN STARCH

For culinary purposes is prepared with the greatest care, from selected Corn, and is a most delicious and wholesome article of food.

ASK YOUR GROCER FOR IT.

SWIFT'S

Choice Chicago Dressed Beef

—AND—

MUTTON.

CAN be found at all times in full supply and at popular prices at the branch houses in all the larger cities and is ***retailed by all first class butchers.***

The trade of all marketmen and meat dealers is solicited for our Wholesale Branch Houses, and the ***public may rest assured*** *that in* ***purchasing our meat*** *from dealers they will* ***always receive the best.***

SWIFT AND COMPANY,

UNION STOCK YARDS,

CHICAGO, ILLS.

Tabasco Pepper Sauce

OR LIQUID PEPPER.

Is simply the Pulp of the Ripe Pepper Extracted by Pressure.

The seed of this Pepper was obtained from Central America, and by careful cultivation in Louisiana for many years has been so improved in strength, flavor and aroma, as to have become a new variety of Red Pepper, superior to all others. The pulp is so handled as to retain all the flavor, strength, aroma and color of the ripe fruit, and to keep unimpaired in any climate. It excites the appetite, promotes digestion, and is pronounced, by connoisseurs, to be the finest condiment in the world. For medicinal purposes it recommends itself by its purity, strength and diffusible form.

Manufactured by E. McILHENNY,

NEW IBERIA, LA.

For Sale by all Wholesale Grocers.

CARNRICK'S SOLUBLE FOOD

IS UNLIKE ANY OTHER INFANT'S FOOD THAT HAS EVER BEEN PRODUCED.

℞

THE FORMULA.

Partially Predigested Milk Solids,	**45 parts.**
Wheat with the Starch converted into Dextrin,	**45 "**
Milk Sugar,	**10 "**

We do not claim this food to be "a **perfect** substitute for human milk." But we do claim that **Carnrick's Food approaches nearer to human milk in constituents and digestibility than any other food that has ever been produced**, and that it is the only infant's food that will, without the addition of cow's milk, thoroughly nurse a child from its birth.

We believe that **Carnrick's Food** solves the problem of a reliable substitute for human milk. The Caseine of cows' milk, by partial predigestion with freshly made Pancreatine, is rendered as easily digestible by the infant as human milk.

We have never published an analysis of **Carnrick's Food** "prepared with milk," for, unlike all other foods, it is prepared by the addition of water only, and we base our claim upon the intrinsic value of the food as compared with an equal amount of solid constituents of human milk. All other analyses or comparisons are misleading. We challenge similar comparisons with any other food, and confidently believe, that if **Carnrick's Food** is depended upon for the nutrition of infants, the great mortality among children will be reduced. Full information regarding the process of manufacture will be cheerfully furnished, and samples sent free to those who wish to test **Carnrick's Food.**

REED & CARNRICK, New York.

GORDON & DILWORTH

MANUFACTURING PURVEYORS

Established 1847

ALIMENTARY PRODUCTS

ALL OF OUR PRODUCTIONS BEAR THIS TRADE MARK

WE WILL PROSECUTE ALL INFRINGEMENTS & IMITATIONS







CHOICE DESSERTS

OVER 100 DOMESTIC & FOREIGN FRUITS AND VEGETABLES TRANSMUTED INTO TABLE DELICACIES

PRICES ON PRESERVED FRUITS REDUCED 1ST DEC. 1885

PRESERVED, CANNED & BRANDY FRUITS, FRUIT JELLIES, VEGETABLES, TOMATO CATSUP, SYRUPS & JAMS, SALAD DRESSING, BLACKBERRY BRANDY, MINCE MEAT, PLUM PUDDING, SWEET PICKLES, OLIVES & CAPERS, WINE JELLIES, MARMALADE, SOUPS, SAUCES &c

SOLD BY THE LEADING GROCERS ON THE AMERICAN CONTINENT.

GRAND NATIONAL PRIZE OF 16,600 FRANCS.

QUINA-LAROCHE

VINOUS ELIXIR,

A STIMULATING RESTORATIVE AND ANTI-FEBRILE TONIC.

This meritorious ELIXIR, QUINA-LAROCHE, is prepared from the **three** Cinchonas; it is an agreeable and doubtless highly efficacious remedy.—*The Lancet.*

QUINA-LAROCHE, under the form of a vinous Elixir, contains the totality of the numerous principles of the **three** Cinchona barks. It is a preparation which renders great services to Therapeutics.—Extract of the *Gazette des Hôpitaux*, Paris.

Far superior to all Ordinary Cinchona Wines.

LAROCHE'S QUINA, tried by the Academy of Medicine of Paris, is a specially prepared Compound Extract of Quinquina, a careful analysis, confirmed by experience, has shown that most of the wines and syrups hitherto used have not contained all the properties of this precious bark, of these some, although beneficial, are altogether lost, while many preparations contain but half the properties of the bark in varying proportions.

Mr. Laroche, by his peculiar method, has succeeded in extracting all the active principles of the quinquina, combining these with *Catalan Wine*, forming an Elixir free from the disagreeable bitterness of other similar preparations. Practitioners have found triple advantages in the use of this Elixir; it is a *strong tonic*, is easily administered, and perfectly harmless, being free from the unpleasant effects of Quinine.

THE FERRUGINOUS QUINA-LAROCHE is the invigorating tonic *par excellence*, having the advantage of being easily assimilated by the gastric juice, without, in any way, deranging the action of the digestive organs, proving itself to be a most efficacious remedy in cases of impoverishment of the blood, **Anæmia, Chlorosis, Intestinal Hemorrhage, Castralgia, Exhaustion,** etc., etc.

PARIS.—22 RUE DROUOT.—PARIS.

Laroche

E. FOUGERA & CO., New York, Sole Agents for the United States.

ARMOUR & CO.

CHICAGO, ILLS.

PACKERS OF

Pork and Beef Products

CANNED MEATS,

ETC.,

FOR HOME CONSUMPTION AND FOR EXPORT

TO ALL PARTS OF THE WORLD.

Also,

SHIPPERS OF

Choice Dressed Beef,

MUTTON AND HOGS,

In Refrigerator Cars,

To BOSTON,

NEW YORK,

PHILADELPHIA,

BALTIMORE,

And other cities throughout the country.

GREENWAY'S PORTER

—AND—

DOUBLE AND EXTRA DOUBLE STOUT.

GREENWAY'S ALE.
INDIA PALE
IN GLASS OR WOOD
AMERICAN
TRADE MARK.
SEND FOR CIRCULARS.
FULLY EQUAL TO THE BEST IMPORTED.
FOR FAMILY OR CLUB USE.
RECOMMENDED BY OUR BEST PHYSICIANS
FOR SALE BY ALL FIRST CLASS GROCERS AND DEALERS.
THE GREENWAY BREWING CO.
SYRACUSE, N.Y.

Greenway Bottling Co.,

BOTTLERS OF

GREENWAY BREWING CO'S BRANDS OF ALE, PORTER, DOUBLE STOUT

—AND—

Germania Brewing Co's Standard Pale Crown Lager & Culmbacher.

N. Y. Depot, 31 Broadway.

Established in London, 1831.

DEAN'S PATENT

ARDENTER MUSTARD.

BEST IN THE WORLD.

WARRANTED ABSOLUTELY PURE.

WARRANTED ABSOLUTELY PURE.

Ardenter Mustard Pellets

—FOR—

Dyspepsia and Indigestion.

UNIVERSALLY recommended and prescribed by physicians. The medicinal property are English mustard seed coated with pepsin and sugar. You will find it will relieve you after using two or three doses. It is very beneficial for Heartburn, Sour Stomach and Headache. They are a beautiful confection for children. Each bottle contains full directions.

W. G. DEAN & SON,

361 and 363 Washington Street, 84, 86 and 88 North Moore Street, New York.

—THE—

CHRISTIAN MOERLEIN

Brewing Co.,

CINCINNATI, U. S. A.,

Brewers of the far-famed

"NATIONAL" EXPORT

(The Queen of Beers)

LAGER.

Owing to its absolute purity, beautiful pale color, fine aroma and nutritious qualities, the above beer has become the PRIME FAVORITE in all the principal hotels and clubs, and in thousands of families throughout the West and South.

Pure LAGER BEER,

"IMPERIAL" and "CULMBACHER"

Brewed & Bottled SPECIALLY FOR HOTELS, CLUBS AND PRIVATE FAMILIES

BY

Beadleston & Woerz

291 W. 10th St. New York.

Orders by Postal Card promptly attended to.

H. CLAUSEN & SON

BREWING CO'S

CHAMPAGNE LAGER BEER,

ROYAL EXPORT LAGER,

EAST INDIA PALE ALE,

EXTRA AMERICAN STOUT.

Bottled for Family Use and Export by

PHŒNIX BOTTLING CO.

888 and 890 Second Avenue,

Bet. 47th and 48th Streets,

NEW YORK.

Order from your Grocer, or direct from us.

FULL WEIGHT
PURE

Dr. PRICE'S CREAM BAKING POWDER

MOST PERFECT MADE

Its superior excellence proven in millions of homes for more than a quarter of a century. It is used by the United States Government. Endorsed by the heads of the Great Universities as the Strongest, Purest, and most Healthful. Dr. Price's Cream Baking Powder does not contain Ammonia, Lime or Alum. Sold only in cans.

PRICE BAKING POWDER CO.
NEW YORK. CHICAGO, ST. LOUIS.

STERLING



BAKING POWDER

MADE FROM
99 50/100 PURE CREAM TARTAR.

This powder never varies. A marvel of purity, strength and wholesomeness. More economical than the ordinary kinds. SOLD ONLY IN CANS.

STERLING MANU'F'G CO.,
12 & 14 Spruce St., New York.

CLEVELAND'S

SUPERIOR

Baking Powder

Is made only of the purest grape cream of tartar, purest bicarbonate of soda, and a small portion of flour, and is warranted entirely free from alum, ammonia, the phosphates, terra alba, lime, and all the adulterants frequently found in ordinary baking powders. It always affords the most nutritious, the most healthful, and the most delicious food, and the purity of materials used in its manufacture, and the nicety of their combination, render it the strongest and most economical ever produced.

It is recommended for purity, efficiency and healthfulness by various state chemists, chemists of boards of health, and professors in institutions of learning throughout the country.

Sold only in tin cans.

CLEVELAND BROTHERS,
ALBANY, N. Y.

MANUFACTURED BY THE



N. K. FAIRBANK & CO'S FAIRY SOAP.

A PERFECTLY PURE WHITE FLOATING SOAP.

DESIGNED EXPRESSLY TO USE IN TOILET, BATH AND NURSERY.

Admirably adapted to every requirement of the Household.

DAINTY AND DELICATE FOR ALL WASHING PURPOSES

For sale by all First-class Grocers and Druggists.

N. K. FAIRBANK & CO.,

CHICAGO, ST. LOUIS, NEW YORK, OMAHA.

ESTABLISHED 1872.

GELATINE.

JAMES CHALMER'S SON'S

Transparent Gelatine.

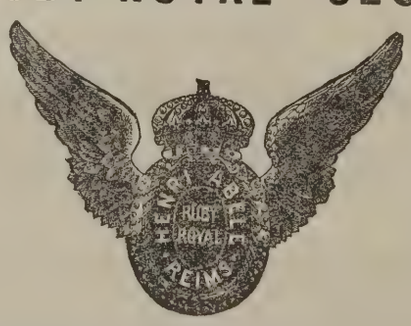
PURITY—STRENGTH.

Best for Family Use.
Jellies, Blanc Mange, Etc.

ACKNOWLEDGED BY EVERY ONE EQUAL TO THE BEST.



RUBY ROYAL "SEC."



This wine, of a bright crimson or Ruby color, possesses exceptional merit in all the characteristics of dryness, mellowness of flavor, and delicacy of fragrance. It is the only red champagne in the market, and can be tried at the Hoffman House, Delmonico's and other first-class places.

Sold by the Leading Grocers.

AGATE IRON WARE

Is the Purest, Cleanest, Most Durable, and altogether the Best Ware for family use ever made. It will not rust or break like ordinary Enamels, and is absolutely pure and safe to use, as certified to by the most eminent chemists here and abroad.



Two thousand different styles and sizes of Agate cooking utensils, for family use, are sold by all first-class dealers throughout the world, and giving universal satisfaction.

Subscriptions $1 per year. Now is the time to subscribe.

AMERICAN ANALYST

FOR THE

FAMILY AND CONSUMER.

A SEMI-MONTHLY ADVOCATE OF PURE FOOD AND THE SUPPRESSION OF ADULTERATION.

Office, 19 Park Place.

[Entered at the Post Office at New York, as Second Class Matter.]

VOL. IV.—NO. 14. NEW YORK, JULY 15, 1888. Whole No. 86

CONTENTS.

A Genuine Heathen. A story complete..... 289
Answers to Correspondents..... 294
Diabetic Food and Gluten..... 299
Digestion, The Problem of..... 292
Domestic Dietetics..... 295
Editorial..... 294
Bacteria in Ice—What One Man Can Do—Weighing Mental Operations—The Ayer Case in Canada.
Fine Porcelain..... 294
Health Flour..... 299
Massachusetts Adulterations..... 293
Microscopic Mechanics..... 293
Porcelain and Pottery..... 296

A GENUINE HEATHEN.

FRED. H. ADAMS IN "*The Northwest.*"

It was in '66, and our party arrived at the lake called Minnewaukan, after a hard trip from civilization of two weeks. Game had been abundant, and in addition to deer and ducks, Miss Broadwinter, the only lady of the expedition, daughter of the General in command of the party, had been kind to me. We had enjoyed a most romantic flirtation. The belle of five seasons had found my attentions better than the attentions of nobody, and had accepted them as coyly as a maid of sixteen. Fresh from the war, with young epaulets sprouting on my shoulders, my modesty and diffidence did not detract from the enjoyment of the occasion. The General was apparently deaf and dumb and blind. Altogether it was a very pretty comedy with no one so violently interested as to turn it into melodrama. The expedition was for the purpose of making a treaty with the Indians, and the old gentleman was doubtless so engrossed with the idea of crowning his life's work by an advantageous dicker that he was oblivious to all else. I then thought his daughter was preparing for the role of heroine in the coming Washington season, and was simply practicing her arts on me by way of diversion, She had been an old flame of my friend Jim Torrance in the year before the war. She was then very young, very beautiful and very ambitious. Jim was a young, penniless graduate, and no match for the artful beauty. At the close of the season he had dropped out of my life and the life of all of his friends as if the earth had opened up and swallowed him. She spoke of him with a sigh, as, "poor, dear Jim," and it was evident that he had been one of her youthful victims, for a thousand scalps now hung at her belt—congressmen, judges, clerks, foreign counts, business men, dudes and adventurers. She was still beautiful at twenty-three. Her eyes were as blue as an Italian sky, a complexion like a baby, and a gleam of gold in her blonde hair. The only draw-back to her beauty was the almost masculine decision and firmness of her chin. Red-lipped and laughing, when her face was in repose she looked like a general in petticoats. She was dangerous—if you did not understand her. She could ride, drive, shoot, play poker, and waltz like a major of dragoons, and her voice when she sang to the accompaniment of her guitar was a suggestion of a band of rosy angels—and yet she had no voice—her music master had told her so. She quarrelled with the General, who knew all about whist, because of a trifling error; but with me as partner, who knew nothing of the game, she smiled when I placed my ace on her king, and timidly inquired what she should lead from, about the propriety of leading back, and all that. With her relations she was a strong, resolute woman; with her lovers she was as a timid little bundle of pink flesh.

The tents were pitched in a glade fronting the broad stretch of lake, the soldiers were at mass, the General was sleeping, the braves and squaws with their gorgeous trappings were pouring around the encampment when, delighted with its beautiful country, I went for a stroll about the lake. Glorious lake! after the wide prairies. Great purple hills, and deep blue water—trees and flowers and pebbly beaches pounded by a surf like the ocean. Every hill had its gorgeously blanketed Indian, who like a wild bird stood aloof until accustomed to the soldiers. Every valley had its herd of ponies. With the additional spice of a sudden bloodthirsty uprising of the noble red man, the mutiny promised to be a very picturesque summer picnic. A thousand yards from the encampment on the lake shore I came to a log house with a tepee pitched beside it. It had a general appearance of frontier civilization. A squaw was busy boiling the pot in the open air, while a pair of picaninnies, in breech clouts, played hide and seek about it. A man in buckskin was at work repairing a canoe, hauled up on the beach. He was a splendid specimen of physical manhood, and evidently young, although his heavy beard rendered it difficult to tell his age. His buckskins fitted him. His slouched hat had a jaunty grace about it. As I approached he reached for his rifle, while the squaw and papooses flew to the shanty and peered furtively out.

"Well?"

"I belong to the party yonder. Didn't expect to see a white man here."

"Humph! If you had come a week later you wouldn't have been disappointed."

"Going away?"

"I suppose you have brought whiskey and beads and calico and bibles to civilize us with, haven't you?"

"I do not think that there is any whiskey in camp, and a little calico and religion won't hurt you, Mr. Indian."

The gentleman in buckskin grinned at this remark, showing a very white and even set of teeth, and growled:

"Where do you come from, anyhow?"

"I come, sir, from the city of magnificent distances."

"Is your war over?"

"All over."

"Did you know a chap named Torrance in Washington?"

"Jim Torrance?"

"It might have been. (With a jerk of his thumb towards the log house.) That is his squaw. Those are his kids."

"It can't be the Torrance I mean. Where is your Torrance?"

"Well, and come to think of it, his name was Jim, a tall, slender, delicate boy with a little black mustache, and mighty pleasant to talk to. Came from some college; Yale, I reckon."

"Great Cæsar! Did poor Jim come to this. Where did he die—when?"

"Humph! He died at Leaf Lake in 1860."

"Was he killed?"

"Yes, civilization killed him. He was then translated into Who-ah-be-nesta—that's Chippewa—means Whoahbe's son-in-law. (Pause.) Billy, old boy, how are you, anyhow? Shake!"

"Jim Torrance, as I am alive! Well, well; we thought you were killed in the war, Jimmy. Good Lord, boy! this is horrible!"

"How horrible, Billy?"

"Why—why—to think that a fellow of your cloth should be living with a tribe of Indians, and married to a ——"

"Squaw, eh?"

"And these are your children?"

"No doubt of it, William. She isn't any society lady; she is Smithanwesson, daughter of Whoahbe. I gave the chief a revolver for her. I had three men with me on a hunting trip at Leaf Lake. One night father-in-law killed them all. The girl, who was very prominent in Chippewa society, took a fancy to me, Pocahontas style, and saved my life. Unlike Capt. John Smith, I married her. They are nice people; no wine suppers, no flirtations, no civil wars. I am the second chief in the nation and a man to be envied, Billy. Nothing horrible about it. Hi, there, little Sevenup! Come here, Ralph Waldo Emerson Whoahbenesta!"

Here the little half-breeds gathered at their father's knee, and eyed me with an open-mouthed amazement that was not all Indian.

"Can your boys speak English," I inquired.

"Yes; I teach them English, Smithanwesson teaches them Chippewa, while Peter Grant, the half-breed, teaches them the French patois. They are quite accomplished, my boys," was Jim's reply.

"Well, Jim, you always did like fishing and hunting."

"Yes, and honest people. My wife's people are a little revengeful, but then they are grateful; they are occasionally bloodthirsty, but again they are kind-hearted and hospitable; they are lazy, but their wants are few and their activity is not mischievous. They neither lie, steal nor slander their neighbors, like the whites."

"What do you do all the year round? Never a book to read nor a person to talk to."

"In the winter we are in the timber with the elk, the bear and the deer. In the summer we are on the great plains after the buffalo and antelope. Read! There is

LACTOPEPTINE,

The most important remedial agent ever presented to the Profession for Dyspepsia, Vomiting in Pregnancy, Cholera Infantum, Constipation, and all Diseases arising from imperfect nutrition.

Lactopeptine precisely represents in composition the natural digestive juices of the Stomach, Pancreas and Salivary Glands, and will, therefore, readily dissolve all foods necessary to the recuperation of the human organism.

CAUTION

We regret that we are compelled to caution the profession in prescribing Lactopeptine, but very careful investigation has proven to us clearly the necessity of it.

Substitution of cheap and worthless compounds are being made in many cases where Lactopeptine is prescribed.

Lactopeptine is always UNIFORM, and its effects are SPECIFIC, and no one has ever been able to imitate its digestive value. If you do not obtain positive results when you prescribe Lactopeptine, you can be sure that some substitution has been made, and in such cases it may be necessary for the physician to prescribe Lactopeptine in the original ounce package to insure certainty of obtaining the genuine article. We can confidently make this assertion, knowing the scrupulous uniformity in digestive value of every ounce of Lactopeptine.

Lactopeptine has always been kept strictly in the hands of the Medical Profession, never having been admitted in any publications but Medical Journals. It is prescribed by the most intelligent and educated physicians in all parts of the world, and there are but few physicians who have ever used Lactopeptine that will not agree with the late Prof. L. P. Yandell, when he says: "Lactopeptine is one of the certainties in medicine, and in this respect ranks with Quinine."

In the various forms of Dyspepsia, in vomiting in Pregnancy, and in Mal-nutrition of children, there is no known remedy so positive in results.

P. O. Box 1574. THE NEW YORK PHARMACAL ASSOCIATION, NEW YORK.

a volume opened before you, and these people have taught me to read it—a volume over which your eyes grow strong and your face brown and your heart light. Sometimes we are at war. The hair in my leggings is Blackfoot hair; I took it. I have kept the tribe at peace generally, but sometimes it is impossible."

"If you wanted war you might have stayed and have helped subdue the rebellion."

"Oh, that was one reason I came away. I couldn't fight old Virginny—I was born and raised there, you know—neither could I fight against the old flag. I was not ready to die for the nigger, neither did I care to keep him in slavery. War, you know, is time and trouble, and I came out among the beasts and aborigines, and it suits me, Billy."

"By the way, Jim, do you remember Bertie Broadwinter, that stunning Washington girl?"

A deep flush mounted to Torrance's forehead.

"I—I—remember the name. She was a blonde with red hair, wasn't she?"

"A red-haired blonde! If the belle of five seasons should hear of that remark she would be wild with rage. There is a tint of red gold in her hair. How was it, Jim? Were you not a little lost in that direction at one time?"

Torrance showed his white teeth in a ghost of a smile, and waved his hand toward the tepee: "There is a woman worth a hundred of her. She is neither accomplished in music nor lying, her skin is black but her heart is the heart of a good woman. She is respectable; your Washington girl was disreputable. I believe I did make a fool of myself about that white, fluffy thing. Did she tell you that I proposed to her?"

"Never."

"Are you intimate with her?"

"Quite."

"The devil you say! I thought it would be known to all the fellows the next morning. She refused me, and, I swear Billy, she admitted that she loved me. Nice people back East. Let's go to supper."

The floor of the lodge was hard, clean swept clay, nearly concealed by bear skins. Trophies of the chase adorned the log walls. Two rude chairs and a table constituted the furniture. The supper was good enough and well enough served, for any hungry soldier or hunter. The woman waited on us. She was young, fairly good looking and very neat. After supper Jim and I talked for an hour and I started to return to camp pondering over the curious situation. A thought occurred to me. I went back and asked Jim if he had ever written to anybody in Washington. He said "but

MELLIN'S FOOD

TRADE MARK

GRANT LABORA

FOR INFANTS & INVALIDS

The Only Perfect Substitute for Mother's Milk.

A Copy of our Book,

The Care and Feeding of Infants

will be MAILED FREE to any address.

DOLIBER, GOODALE & CO.,

40-41-42-43 Central Wharf, Boston, Mass.

ASK YOUR GROCER FOR IT. USE NO OTHER.

IMPEROYAL Wheat, Buckwheat and Cereals.

M. D. STEVENS' IMPEROYAL WHEAT & BUCKWHEAT FLOUR REGISTERED TRADE MARK

BEST IN THE MARKET.

IMPEROYAL VACUUM COOKED OATS, WHEAT AND HOMINY

AND

Griddle Cake Flour.

M. D. STEVENS' IMPEROYAL NEW PROCESS REFINED FLOURS.

Require but one minute in preparation, without **Salt, Baking Powder or Yeast.**

18 MERCANTILE EXCHANGE,

NEW YORK.

DIRECTIONS ON EACH PACKAGE.

Can be used for all kinds of Pastry, Bread, Biscuit, Griddle Cakes, etc., and its absolute freedom from Alum, Terra Alba, or any injurious ingredient, make it a necessity in every household. No lady can afford to be without it.

SOLD BY FIRST-CLASS GROCERS.

NESTLÉ'S FOOD

NESTLÉ'S TRADE MARK MILK FOOD.

IS ESPECIALLY SUITABLE FOR INFANTS IN HOT WEATHER.

Requires No Milk in Its Preparation and is Very Effective in the Prevention of Cholera-Infantum.

"Ziemssen's Cyclopedia of the practice of Medicine," Vol. VII., the standard authority, says: **"In cases of Cholera-Infantum Nestle's Milk Food is alone to be recommended."** Because the gastro-intestinal disorders to which infants are so subject are provided for by presenting only the *nourishing* properties of cow's milk in a digestible form. "Cow's milk produces a coagulated mass of curd or cheese, which the immature gastric juice is **utterly unable to dispose of.**"

This is one of several reasons why infant foods requiring the addition of cow's milk fail as a diet in hot weather.

Pamphlet by Prof. Lebert and sample sent on application.

THOS. LEEMING & CO., Sole Agents, New York.

NO LOOSE BRISTLES!
NO BLEEDING GUMS!
PERFECTLY POLISHED TEETH!



Three Prominent New Orleans Dentists voice the opinion of their profession after thorough tests.

NEW ORLEANS, June 11th, 1888.

After satisfactory trial, I can safely say that the polish obtained from the Felt is superior to that which is obtained from the bristles. JAS. WEST, D.D.S.

I consider your brush an improvement on the old tooth brush. R. J. FRIEDERICHS.

I can cheerfully recommend it as being superior to any other in the market. I intend to recommend it to all my patrons. Respectfully, G. P. MALONEY, D.D.S.

First cost, **60 cents**, for holder and box of 18 Felt Polishers, latter need only be renewed, 25 cents per box; holder imperishable; at all dealers or mailed by HORSEY M'F'G CO., Utica, N. Y.

IMPORTANT
TO THE
MEDICAL PROFESSION.

Send your address to THE NEW YORK PHARMACEUTICAL COMPANY, BEDFORD SPRINGS, MASS., for Illustrative Hand-book, **FREE**, containing valuable formula, special directions, and the testimonials of one thousand physicians in favor of the great merits of

HAYDEN'S
Viburnum Compound,
IN FEMALE DISEASES.

Also, the

URIC SOLVENT,
For KIDNEY DISEASES, and complaints arising therefrom.

once," when he had written to an attorney named Bland in relation to some Indian matters. Bland was an old friend to Jim, and in the letter he had enjoined him to secrecy concerning his whereabouts. Had Miss Broadwinter learned of Jim's place of living and did this account for her erratic trip? I determined to find out in the morning. In the morning she appeared as fresh as a rosebud with the dew on its petals. The first question she asked was as to whether anybody but Indians lived on the lake. I told her that there was a half-breed named Le Boif, a descendant of an old French voyager who lived on the lake, and I proposed to her a morning fishing excursion with Le Boif, alias Jim Torrance as guide. The Indian pow-wow was to take place in the afternoon. On the way to Jim's camp I ascertained that Bland was her cousin, and my suspicions as to the object of her trip had become to me a certainty. To preserve her complexion the lady's face was heavily coated with magnesia. Jim failed to recognize her, and readily agreed to take her out on the bar while I fished from shore. She was impressed with Torrance's powerful and picturesque figure and was delighted as a child at the prospect of a voyage in the frail birchen structure. As they went out into the lake the morning sun fell full on the swarthy face of Jim as he paddled, and the pretty girl in his bow was evidently puzzled by some faint resemblance in him to the delicate society dude of seven years before. They passed into the mist that hung low on the lake, and I heard the splash of the stone anchor as they reached the bar. I could not see him but every word came back to me through Nature's telephone. He asked her in the Canadian patois if she would fish. I heard the flapping of some huge pike as he was released from the hook and fell in the bottom of the canoe. A long pause. "Mr. Torrance—Jim, don't you recognize me." "My God!" from him and then some more bastard French, in which he told her to sit still or she would swamp the boat. A nice place for lovers to meet after an absence of seven years. A kiss meant a cold bath. They did not need a chaperone. She spoke of the night years ago when at a ball in the Cumberland they had parted. She had expected to see him again the next day, and be a sister to him as before. He stuck to his French. He said she was mistaken—that seven years was a long time to remember such a little thing. That he was an Indian, nothing more.

She replied that he was cruel to keep up his disguise, that if her eyes had not told her it was he, her heart would have recognized him.

He laughed sardonically and, still in French, said the heart was a very unreliable guide—that it was always changing and shifting—that with proper command of the organ it might be made to reflect, like a looking-glass, anything the owner wished. He said that the people of the lake were very simple people and not used to the ways of the whites. That it was cruel of her to trifle with his simple nature, for he might believe her serious. She laughed uneasily, she said he deserved to be cut by all his acquaintances for leaving them so abruptly and remaining away. That he ought to have his ears boxed for masquerading before her as an ignorant half-breed. He continued his sardonic banter, and then she broke down and cried—the belle of five seasons.

They pulled silently into shore. He helped her out of the canoe, and said in a low tone, "If I show you my wife and my children you will be convinced that you are mistaken." She replied in the same low tone, "Yes." We went into the lodge. The chief's daughter gathered her children to her, suspicious, jealous, alert and defiant. She looked positively handsome while the pretty Washington girl on whose cheeks the tears had traced heavy lines through the magnesia appeared at a decided disadvantage.

"Come here, Sevenup! Come here, Emerson."

The little fellows came to his knee.

"Whose boys are you?"

A quick, eloquent gesture without words told the tale.

"Where is your mother?"

Another quick gesture toward the oriental statue at the door.

"Say your catechism!"

Two little voices piped: "Me no lie, me no steal, me no beg, me no fight if can help, then me fight hard."

"That is right, my sons. That is good doctrine but it unfits you for civilized society. Now go back to your mother."

Without a symptom of further recognition Miss Broadwinter thanked Jim for his kindness in taking her to the bar and showing her his boys, and we returned to camp with our string of fish. Three days later the treaty was concluded. When I bade Jim good-bye he said, "Mark my word, Billy, there is something more in Bertie Broadwinter's trip than you think. True love existing after seven years of separation is a rare bird."

Jim is now in Montana with flocks and herds galore, and his ranch is Indian headquarters. A relative has died and left him a large fortune. Whether the lady with the gleam of gold in her hair had heard of the legacy I have never discovered.

DURABILITY OF WHEELS—A steel car wheel is expected to run 50,000 miles, but very few of them ever make that distance.

IMITATION LEATHER—A new material called "leatherine" is an English manufacture. It can be sold for 5 or 6 cents per pound, is said to be as tough as leather, and is designed for packing and bagging.

The Standard of Excellence.
KINGSFORD'S
OSWEGO
Pure and Silver Gloss



STARCH
KINGSFORD'S
OSWEGO CORN STARCH
FOR
Puddings, Custards, Blanc-Mange, Etc.
THE PERFECTION OF QUALITY.
WILL PLEASE YOU EVERY TIME.
Always ask your Grocer for these goods.

COLDEN'S LIQUID BEEF TONIC.
ORIGINAL LABEL:
"Colden's Liebig's Liquid Extract of Beef and Tonic Invigorator."

AN INVALUABLE AID IN THE TREATMENT OF ALL CASES OF DEBILITY.

Established 15 Years. Endorsed by Scores of Physicians. Essentially Different from all other Beef Tonics. Beware of Imitations.

COLDEN'S LIQUID BEEF TONIC consists of the Extract of Beef (by Baron Liebig's process), spirit rendered non-injurious to the most delicate stomach by extraction of Fusel Oil, soluble Citrate of Iron, Cinchona, Gentian and simple aromatics. An official analysis of this preparation by the eminent chemist ARTHUR HILL HASSALL, M. D., F. R. S., and an endorsement by SIR ERASMUS WILSON, F. R. S., is printed on the label of each bottle.

Its Range of Action Embraces all Cases of Debility.

By the urgent request of several eminent members of the medical profession, I have added to each wineglassful of this preparation two grains of SOLUBLE CITRATE OF IRON, and which is designated on the label as "No. 1," while the same preparation, without Iron, is designated on the label as "No 2."

It acts directly on the sentient gastric nerves, stimulating the follicles to secretion and gives to weakened individuals that first pre-requisite to an improvement, an appetite.

☞ *I will, upon application, send a sample bottle of Colden's Liquid Beef Tonic to any physician in regular standing. Please ask your Dispensing Druggist (if he has not already a supply) to order it. In prescribing this preparation physicians should be particular to mention "COLDEN'S" viz: "EXT. CARNIS. FL. COMP. (COLDEN). It is put up in pint bottles and can be had of Wholesale and Retail Druggists generally throughout the United States.*

C. N. CRITTENTON, Sole Agent,
115 Fulton Street, N. Y.

Please Mention the AMERICAN ANALYST.

THE PROBLEM OF DIGESTION.

THE ROLE OF THE BILE IN THE DIGESTION OF FATS.

At the Paris Academy of Sciences, meeting of January 16, 1888, M. A. Dastre spoke as follows: I demonstrated several years ago that the presence of bile in the stomach did not disturb gastric digestion, and that it did not result in the precipitation of peptones, such as is seen in test-tube experiments. I also stated that it was a mistake to suppose, as some physicians and physiologists do, that the entrance of bile into the stomach could produce vomiting or result in grave gastric disturbances. These facts were established by me by the artificial introduction of bile into the stomachs of dogs at various periods during the process of digestion. The method employed was either that of œsophageal introduction by the sound, or by establishing a gastric fistula. My assertions were confirmed by the elaborate researches of R. Oddi and Marcacci (of Sienna). On the 16th of July, 1887, I exhibited before the Paris Society of Biology, two dogs in whom I had established a cholecysto—intestinal fistula. This operation had succeeded in deflecting the flow of bile from its natural direction and allowing it to escape into the middle of the small intestine (jejenum) in places of the duodenum, or first portion of the bowel. In order to accomplish this result, I merely removed by operation a sufficient piece (1 centimetres long) of the bile duct, and then attached the gall bladder directly to an opening made in the intestinal wall. The establishment of fistulæ of this kind has enabled me to study the problems of the digestion of fats and fatty substances, not outside of the body (as has been hitherto generally done by others), but within the living organism. It is well known that since the investigations of Claude Bernard, the digestion of fats has been attributed to the action of the pancreatic juice, rather than that of the bile. In test-tube experiments, it is true, the pancreatic juice is capable of emulsifying and digesting this class of substances. Among living animals, the rabbit furnishes an example, which might be construed as a natural argument in favor of the same view, for in this animal it is found that the pancreatic duct opens into the intestine about 35 centimeters lower down than the bile duct. In the intervening space, the ingested food having left the stomach is acted upon solely by the bile. If now some fatty matter be mixed with the food, it is easy to see (as Claude Bernard pointed out) that in this space the fats do not become emulsified and are not digested. It appears that the fat-carrying lacteals do not assume the characteristic milky look before the pancreatic secretion has had an opportunity to act, namely, lower down in the course of the intestine. It is seen from many experiments on the dog that this animal readily furnishes the opposite condition of that which has been described in the rabbit. That is to say, in the dog, after my successful operation, the bile duct opens into the intestine much lower down than does the pancreatic duct. The distance varies in different experiments from 50 centimeters to one meter. Consequently it so happens that for this entire length, the fatty substances come in contact only with the pancreatic secretion. This artificial arrangement in the dog offers the following advantages: In the first place the field of observation is a more extended one than in other animals not submitted to operation, and in the second place, the lacteals of the dog represent the best and most distinct type of these vessels. In order to assure myself that dogs operated upon in the way described did not suffer from impaired digestion, I observed two animals with these fistulæ for four months, and found them to remain in perfect health. These two animals were supplied with a copious meal, consisting of meat, fat and milk. They were then killed during the process of most active digestion. An examination showed, with remarkable distinctness, that the lacteals were quite transparent between the stomach and fistula. That is to say, there had occurred no notable absorption of fat in that portion of the alimentary canal in which the pancreatic juice alone had acted. On the other hand, a few centimeters below the fistula and after the intervention of the bile, the lacteals were found to be quite milky and obaque. The interpretation of these positive facts permits but a single doubt. It might be feared that the observations were made too slowly. In that case the network of lacteals first alluded to as being found empty, would prove, not that no absorption had occurred, but rather that it had already terminated. I believe that I have met this possible objection by assuring myself that, in these two animals, the stomach, as well as the first part of the intestine, still contained some of the ingested food. It follows, therefore, that if our observations on the rabbit teach us that the bile alone, in the living animal, is impotent to accomplish the perfect digestion and absorption of fats, so too, our experiments on the dog demonstrate that the pancreatic juice alone is equally impotent to effect such a result. *A mixture of these two secretions is quite indispensable. The bile is just as necessary as the pancreatic juice for the digestion of fatty substances.* Our experience as regards the total suppression of the bile or the pancreatic juice, permits us to assign a more exact role to each of these secretions. Thus, it would appear that the bile is intended more particularly to facilitate the absorption of fats in their natural state, whereas, the pancreatic juice fulfills the office of splitting up the compounds into simpler bodies. The stools of animals in whom the bile is prevented from being poured out into the alimentary canal, are found to contain forty or more per cent. of undigested fats (100 representing the total amount of fats ingested). In the normal condition of affairs, according to the researches of Bidder and Schmidt and Voit, scarcely one per cent. of the fats is evacuated unchanged. Analogous results are obtained in cases of complete suppression of the pancreatic secretion. That is to say, the absorption of fats is not altogether checked, but it is always considerably diminished. The following observation will make this matter clear. A dog, having a biliary fistula, receives into his stomach a large quantity of fatty substances. Three hours later the animal is killed. An examination now shows the following condition of things: From the duodenum to about the middle of the large intestine, the lacteals are turgescent with a milky fluid.

Nevertheless this evidence of fatty absorbtion differs in several particulars from what is seen in the normal state during active digestion: 1. The *receptaculum chyli* is filled with a thickish white substance, under the conditions above alluded to. This milky material appears to consist largely of fatty acids. 2. The lacteals appear tense, filiform in shape, and are found replete with the same whitish substance just mentioned. 3. The rare sight is seen, with remarkable distinctness, of nodosities or bulging pouches along the course of the lacteal vessels. These pouches occur at a distance of from one another of about one centimeter. They correspond to the valves of the chyliferous vessels. Their marked distension goes to prove with what difficulty this particular fatty substance circulates within those vessels.

BURNETT'S
PERFECTLY PURE HIGHLY CONCENTRATED
Standard Flavoring
EXTRACTS

THE superiority of these Extracts consists in their
PERFECT PURITY AND GREAT STRENGTH.

There is no subject which should more engross attention than the purity of the preparations which are used in flavoring the various compounds prepared for the human stomach.

They are not only true to their names, but are prepared from fruits of the best quality, and so highly concentrated that a small quantity only need be used.

JOSEPH BURNETT & CO., Boston, Mass.

SIBERIAN METEORS.—Foreign scientists have discovered minute diamonds in meteorites found in Siberia.

A LARGE COLLECTION.—More than 200,000 bird skins are now shown at the Natural History Museum in London.

VINE-PRUNING.—Professor H. Muller, an eminent botanist, says that the best time to prune vines is while the grapes are ripening, and that the young shoots should be selected for this purpose, as they require for their development a large quantity of sugar, to the detriment of the ripening fruit.

CHERISH THE TOADS.—"I honestly think," says T. D. English, "that a healthy and able-bodied toad, of industrious habits, will get away with and digest his own weight of insects during twenty-four hours. If you be of an insecticidal turn of mind, turn out by daylight, and watch the toads getting breakfast. It is entertaining."

ARTESIAN POWER.—Heavy machinery is now run by artesian well power in many parts of France, and the experience of the French shows that the deeper the well the greater the pressure and the higher the temperature. The famous Grenelle well, sunk to the depth of 1,800 feet, and flowing daily some 500,000 gallons, has a pressure of 60 pounds to the square inch, the water being also so hot that it is used for heating the hospitals.

A LONG ROPE.—A wire rope half a mile long, six and one-fourth inches in circumference, and weighing seven and one-half tons, has been manufactured at Gateshead, Eng. There are six strands of nineteen wires each in it, the breaking strain of the whole being 175 tons, and that of each wire in the rope 120 tons to the square inch. This immense rope is to be used in a colliery in North Wales.

"ROYAL POLISH"



The Most Reliable Dressing
FOR
Ladies' and Children's Shoes.

It is the BLACKEST.
It COATS the Leather the LEAST.
Does NOT INJURE the Finest Kid.

There is nothing AT ANY PRICE equal in quality, or so convenient and CLEANLY TO USE.

SOLD EVERYWHERE.

Ask Dealers for "BIXBY'S ROYAL POLISH."



"BIXBY'S BEST"
For GENTS' BOOTS.

Shines Quickly!
Saves Labor and
Leather!!

—TRY—
"Size 5" OR
"Size B"
WITH
Pat. Sliding Handle



THE MOST PERFFECT EVER INVENTED.
Working under the box, ready for use when wanted



MASSACHUSETTS ADULTERATIONS.

DR. B. F. DAVENPORT'S REPORT TO THE MASSACHUSETTS BOARD OF HEALTH, PUBLISHED IN THE 1888 REPORT.

I have the following report to make upon the 113 samples of food which were submitted to me for examination, and of which 28, or 24.8 per cent., were found not to be of the good standard quality for which they were purchased. This is a decided gain over the 33.3 per cent. found in last year's samples.

BUTTER.

Among the samples were 48 which were marked as butter and seven as oleomargarine. Of these, 14 so-called butters proved to be oleomargarine, and one of the oleomargarines proved to be a true butter.

Since the national oleomargarine act has gone into operation I have no longer met with the mixed goods I previously did. Now all samples prove to be either whole butter or else straight oleomargarine.

CHEESE.

Of cheese 13 samples were examined for the presence of foreign fats. In no case was any foreign fat found. In the cases of cheese poisoning, which are occasionally reported, the cause is doubtless the presence of a fermentation product known as ptomaine.

ANNOTTO.

The very general use of annotto, or other coloring matter in butter or cheese, is to be condemned as having but one fraudulent purpose, that of making them each to appear to be of a better or finer quality than they really are. In the case of butter it is to make the inferior winter, or dry feed butter, to appear to be June or grass butter. In the case of cheese it is to make skim or poor milk quality cheese to appear to be as of whole or rich milk.

When the farmers and dairymen no longer use coloring to falsify the appearance of their own product they can more becomingly demand that the oleomargarine manufacturer be no longer allowed to use it in his product. In the cause of simple justice, *neither* of them should be allowed to use it at all.

CONDENSED MILK.

Of condensed milks six samples were examined, which were all of Swiss origin. These all, as is the usual thing in this article, were somewhat deficient in the proportion of fat present, as compared with good, natural milk, and somewhat excessive in the amount of sugar contained, although milk sugar alone, rather than any foreign cane sugar, seemed to be present in these samples. There appears to be some great practical difficulty in condensing into a uniform mass a milk having a good natural amount of fat present: a milk of a natural or artificial skim-milk quality is much more easily worked in the vacuum pan.

MOLASSES.

Of molasses 21 samples were examined for the presence of glucose syrup and of tin salts. Of these six samples were found to contain extra glucose in considerable amounts, that is, from 20 to 30 per cent., or even more. No tin salts were found. All of them were probably of West Indian origin, where tin solutions are not generally used in the bleaching of the sugar crystals, as is the custom with the planters in Louisiana with their centrifugal sugars. That the New Orleans *Picayune* should commonly include tin crystals in advertised lists of plantation chemicals, is strong evidence of how general their use is there. In all known samples of straight New Orleans molasses which I have hitherto examined for it, I have found tin to be present; therefore some knowledge of the origin and mode of manufacture of a molasses is necessary for the formation of any just opinion as to the probable cause for any tin salts which may be found to be present in it.

CIDER VINEGAR.

Of cider vinegar nine samples were examined, of which seven were found not to be of good, standard quality, being deficient either in acid strength or quality as the product of pure apple juice. The question of quality was determined by the methods of examination mentioned in my last report. For commercial purposes the acid strength is easily determined by the following method. The apparatus consists simply of a glass tube, closed at one end, of which the bore is two to three eighths of an inch. At the height of 6 c.c. above the closed end of the tube the 0 per cent. is placed. Above this each c.c. and subdivision of tenths is marked up to 10 c.c., but always with the sign per cent. instead of c.c. For use the tube is filled with the vinegar to be tested for its strength up to the 0 per cent. mark. After a drop or two of a tincture of phenolphthalein has been added, a normal solution of caustic alkali is cautiously added, with repeated inversions and gentle shaking up of the contents of the tube while firmly closed by the thumb placed over its mouth, until at last a single drop of the alkali causes a permanent pink color to appear in the mixture. The height of the fluid then within the tube, when read off upon its graduation, gives the percentage of acidity of that sample of vinegar. The tube when emptied and rinsed out once with the new vinegar to be tested is ready for use. The cost of such an acetometer is less than a dollar. An ounce or two of a tincture of phenolphthalein and a pint or so of the normal volumetric solution of soda, which is described on page 339 of the last edition of the United States Pharmacopœia, can be obtained for a small sum from any competent apothecary in any town of the State, and are the only test solutions needed. One pint of the soda would test about 100 vinegars of ordinary cider vinegar strength.

HONEY.

Of honey six samples were examined and all found to be the true product of the honey bee. The adulteration of honey, especially of that sold as strained or clarified honey, is now exceedingly common. It is said that modern chemistry has devised a method whereby certain organic acids acting upon some of the starches, such as maize, but not on potato, will produce a syrup, which in a proper concentration, and allowed to undergo a ripening process by simple aging for two or three weeks, will then so exactly resemble true honey that not only it cannot be distinguished from it either in taste or appearance, but even cannot be detected through the use of polarized light, or the other ordinary means used by professional chemists for discriminating between the different kinds of sugars. Yet, fortunately, there is a very simple and reliable method for detecting the most common of all forms of adulteration in honey, that with common glucose syrup. The admixture of any profitable amount of this glucose to a honey will cause it to leave upon ignition an ash having a neutral reaction upon test paper. The ash of true honey is always strongly alkaline, and contains from one to three one-hundredths of one per cent. of phosphoric acid. In this last particular all kinds of artificial honey differ widely from it, running much either above or below it.

CUSTARD POWDER.

One proprietary food, a custard powder for making up custards without the use of eggs, was submitted for examination for the presence of any injurious yellow coloring matter. The color was found to be due to the presence of a small fraction of one per cent. of true saffron. The most of the powder was simply an arrow-root starch flavored with lemon.

YELLOW CAKES.

Two samples of yellow cakes were examined for the presence of chrome or any other injurious yellow coloring matter present as a substitute for eggs, but none such was to be found in either case.

MICROSCOPIC MECHANICS.

THE SMALLEST SCREWS IN THE WORLD.

The smallest screws in the world are made in a watch factory. There can be no doubting that assertion on any score. They are cut from steel wire by machine, but as the chips fall down from the knife it looks as if the operative was simply cutting up the wire for fun. One thing is certain, no screws can be seen, and yet a screw is made every third operation. The fourth jewel-wheel screw is the next thing to being invisible, and to the naked eye it looks like dust. With a glass, however, it is seen to be a small screw, with 260 threads to the inch, and with a very fine glass the threads may be seen very clearly. These little screws are 4-1000th of an inch in diameter, and the heads are double the size. It is estimated that an ordinary lady's thimble would hold 100,000 of these tiny little screws. About 1,000,000 of them are made a month, but no attempt is ever made to count them. In determining the number 100 of them are placed on a very delicate balance, and the number of the whole amount is determined by the weight of these. All of the small parts of the watch are counted in this way, probably fifty out of the 120. After being cut, the screws are hardened and put in frames, about one hundred to the frame, heads up. This is done very rapidly, but entirely by sense of touch instead of sight, so that a blind man could do it just as well as the owner of the sharpest eyes. The heads are then polished in an automatic machine, 10,000 at a time. The plate on which they are polished is covered with oil and a grinding compound, and on this the machine moves them rapidly by reversing motion, until they are fully polished.

SILK FOR STEAM PIPES.—Waste silk has been shown to be the most effective non-conductive covering for steam pipes. The price is high, but the demand is very great.

HEAT AND GERMS.—The direct action of steam at 212 degrees is sufficient to destroy all germs in from five to fifteen minutes. The efficacy of heated dry air is uncertain.

WHERE THE IRON GOES.—Railways are said to consume more than half the world's production of iron, the car wheels required in the United States alone taking more than two million tons.

THE LARGEST FLOWER.—The largest known flower is the Rafflesia, a native of Sumatra. It measures three feet in diameter, weighs fifteen pounds, and has a calyx holding six quarts. The odor is offensive.

TO DRILL GLASS.—In drilling glass stick a piece of stiff clay or putty on the part where you wish to make the hole. Make a hole in the putty the size you want the hole, reaching to the glass of course. Into this hole pour a little molten lead, when, unless it is very thick glass, the piece will immediately drop out.

American Analyst,

Published on the 1st and 15th of each month.

Subscription, - - - - - - $1 per year.
Single Copies, - - - - - - 5 cents.
Subscriptions to foreign countries, - $1.50.

Remit by Express Money Order, Draft, P. O. Order, or Registered Letter.

Advertising rates on application.

EUROPEAN AGENCIES.

On file at "American Exchange," 449 Strand, London; and American Exchange," 35 Boulevard Des Capucines, Paris.

THE ANALYST PUBLISHING CO.,
Publishers.

H. LASSING, M. D., } ***Editors.***
T. P. McELRATH, }

No. 19 Park Place, ... New York.

NEW YORK, JULY 15, 1888.

TO OUR EXCHANGES.

To facilitate delivery here, we would ask our exchanges to address

THE AMERICAN ANALYST,
19 Park Place,
New York.

ANSWERS TO CORRESPONDENTS.

BOWERS.—*Please explain what is called humidity, spoken of in the weather reports?* Humidity is moisture in the atmosphere; when it is condensed by coming in contact with bodies colder than the atmosphere, it is dew, and when, in the form of clouds, it is condensed by a fall of temperature, it forms drops of water, which descending to the earth, are called rain. The proportion of watery vapor in the atmosphere constantly varies, but averages the following proportions: 1,000 cubic feet of air contain as much vapor as, were it condensed to water, would yield about two-fifths of a pint, but the point of saturation would be about one-half a pint.

BACTERIA IN ICE.

Bacteria, it is now generally known, are not destroyed by temperatures as low as the freezing point. At a temperature of 32° to 39° *F.* bacteria become dormant and are incapable of propagation, but retain their vitality. Experiments have shown that bacteria exposed to a temperature far below zero have, upon being warmed to 43°–54° *F.*, been enabled to resume all their normal functions. It is therefore certain that ice frozen naturally or made by artificial processes from ordinary water may contain bacteria and germs. Dr. Carl Fraenkel of the Hygienic Institute in Berlin has made some observations in this direction which have been published in the *Zeitschrift fuer Hygiene.* Dr. Bischoff of Berlin has also made chemical and microscopical examinations of the various kinds of ice, natural as well as artificial, for sale in Berlin. Many of the samples of ice thus examined were found to be as impure and unfit for use as the most impure and unwholesome drinking water. It was remarked that while the greatest care is observed in the selection of wholesome drinking water it is most astonishing how little thought or care is bestowed upon the more dangerous impurities contained in ice. The German government finally ordered the discoverer of bacteria, Dr. Robert Koch, to make an official investigation. The method of procedure was that of allowing a c. m. of ice to melt, and cultivating the resultant water in gelatine. It was then found that seven specimens of ice, from as many different sources, contained in that quantity of melted ice, from 140,000 germs, the smallest number, to 880,000 germs the largest number. It was thus conclusively shown that freezing does not destroy bacteria. The most remarkable thing was the varying results, but this can be accounted for by the method of examination and the time allowed to elapse between the melting of the ice and the examination. Enough has been shown, however, to prove that American experiments have been fully corroborated by the best European authorities.

WHAT ONE MAN CAN DO.

A French physician named Raoul, who long dispensed drugs on a man-of-war, finding life very dull on board ship, stepped outside his professional line a while ago to distinguish himself, and the results have been so noteworthy that the Paris Society of Commercial Geography has just honored him with one of its medals. It occurred to him that the useful products of Tahiti, that large and lovely island of the Society Group in Polynesia, could be greatly increased by judicious importations from the flora of other countries. So he laid a considerable part of the world under contribution, and in course of time many hundreds of foreign plants were doing their best to take root in the soil of Tahiti. Among his collections were rubber trees from Madagascar, ebony, teak, and red cedar from Australia, tobacco from Java and the Rio Grande, cotton from Georgia, hemp from Manila, cinnamon and nutmegs from the Maly Archipelago, grapes from Madeira and Teneriffe, coffee from Formosa and a very large variety of grasses and fruit trees. He established a nursery near the chief town of Tahiti, and he has already proved that the larger part of his plants will succeed in this favored island. Grape culture, which he introduced, is already beginning to enrich the country, and it is said that through the efforts of this man alone the aspects of the vegetable kingdom in Tahiti are undergoing a remarkable change for the better.

WEIGHING MENTAL OPERATIONS.

Starting with the idea that the hand varies sensibly in size with the amount of blood in it at any moment, Professor Mosso, an Italian physiologist, has made some most interesting investigations. In his first experiments the hand was placed in a closed vessel of water when the change in the circulation produced by the slightest action of the body or brain, the slightest thought or movement, was shown by the rise or fall of the liquid in the narrow neck of the vessel. With a large balance on which the horizontal human body may be poised he has found that one's thoughts may be literally weighed, and that even dreams or the effects of a slight sound during slumber turn the blood to the brain sufficiently to sink the balance of the head. The changing pulse even told him when a professional friend was reading Italian and when Greek, the greater effort for the latter duly affecting the blood flow.

THE AYER CASE IN CANADA.

The Dominion Customs Department, who some time ago made a seizure of a large quantity of the J. C. Ayer Company's medicines on the ground that the unmixed ingredients should pay duty as if they were finished goods at full market price, has been defeated in the Dominion courts, and Messrs. Ayer have thus been fully exonerated by the highest tribunal. This will forever settle this question. We have heretofore given the details of this case in full, and only need now to congratulate the Ayer Co. on this result.

FINE PORCELAIN.

HOW THE CELEBRATED SEVRES BLUE PORCELAIN IS MADE.

BY CHARLES LATH.

[Translated for the AMERICAN ANALYST by Marcus Benjamin.]

Concluded.

By examining the plan of removal and the results of the firing we were able to exactly define limits to the zones where the shrinkage had taken place, and to assume the following facts as demonstrated: The blue was fine in localities where the flame circulated rapidly, while it was uneven where the current was weaker. There were jets of gas, and in consequence an accumulation of the products of an imperfect combustion. These latter localities were principally in what are called the flanks of the flurnace; the others (the good localities) may be indicated by lines which, leaving the interior openings of the hearths, communicate with the openings of the firing chambers. No circumstance within the last three years has tended to disprove these observations, and firings made in accordance with these theories have been perfect. In this manner may be explained how the heaps situated on the limits of the two zones frequently produce specimens divided in two, as regards the quality of the blue, in such way that the same piece is sometimes very fine on one side and completely ruined on the other. These facts and many others, thus far unexplained, now appear perfectly clear. Wherever the gases circulate and are burned the blue is fine, where the current is slow reduction takes place and the blue is shriveled up.

More recently I have directed that the gases of the furnaces be analyzed during firing. Experiments soon confirmed the facts which I have just described, and present a regular development in scientific order of the operations. These analyses have shown that it is necessary to have a certain relation between the different gases in order to have good results, and, furthermore, it has demonstrated to us what modifications it is best to make in the furnace during firing. When the analysis indicate an insufficient proportion of oxygen, the draft is increased or a sufficient number of logs of wood are removed in order to allow the air to enter.

The two following samples show precisely my idea. In a firing, which lasted thirty-six hours, the mean of the analysis of the last twelve hours was—

Carbon dioxide	12.5
Oxygen	8.5
Carbon monoxide	none

The amount of oxygen contained in the two gases was twenty-one; the remainder may be regarded as pure nitrogen and free from carburetted compounds. The results were superb.

In another instance, when the firing lasted 37 hours and 40 minutes, the analysis of the last twelve hours gave as an average—

Carbone dioxide	13.5— 14
Oxygen	6. —6.5
Carbon monoxide	none

The residue, 80, contained at most 75.4 of nitrogen, the rest, 4.6, being carburetted compounds. The result was disastrous, and the charge turned out poor.

But these considerations, although of undoubted value, are insufficient when it is necessary to produce important specimens of the blue ware, for they only allow the use of places where the circulation of gas is rapid, and in consequence a large portion of the furnace must be considered defective. The true remedy lies in the employment of suitable apparatus—I refer to furnaces in which the circulation is uniform and regular. These furnaces are designated by the name of furnaces with reversed flames. In these furnaces there are jets or eddies, the gas does not remain in one locality, and since I have used them for the production of blue ware at "strong firing" no shrivelling has occurred. If now

and then a few pieces are ruined, on examination some cause has always been found to explain in a reasonable way the wherefore of the accident. In conclusion, this mode of production, if the previous facts as given are taken in consideration, will give satisfactory results at least as far as shrinkage is concerned.

We now pass to the consideration of other accidents.

When we examine a specimen on which the glaze is not uniform the conviction is soon forced on us that it is not due to any chemical decomposition, but it is simply a physical action. For we find that the surface of the porcelain is in no way modified, the blue spots themselves are pure in tone, of good enamel. How then does it happen that the color collects together on the surface of the objects? To what shall we attribute these flakes?

Here likewise the action of moisture has been held responsible. It is claimed that in certain circumstances the mixture applied on the porcelain becomes detached by the influence of a slight layer of water on the surface over which the color floats held by some sort of a fatty essence. I endeavored to verify this interpretation by all sorts of means, by exposing the porcelain to the action of prolonged moisture, by mixing the coloring material with water, by covering the successive layers of blue with water as they were applied to the porcelain. In no instance was I able to reproduce the spotted appearance in the experiments made in the laboratory.

On the other hand, my experiments continually showed that this lack of uniformity, which is so extremely rare on large pieces of porcelain, was one of frequent occurrence in small objects and especially in plates.

On more closely examining this phenomena, I was lead to think that it was due alone to the action of the fatty essence of turpentine which did not volatalize, but had decomposed at a high temperature, giving rise to different carbonated liquids. When several pieces of porcelain, prepared for the blue glaze, are placed in a glass tube and heated up to a dark red heat, it will be noticed that the pieces placed at the lower part of the tube give off heavy fumes which condense on the upper portions where they mix with the blue and produce the spotted appearance. This observation, applied to the firing of pieces, leads to the following consequences: When an object is fired in the Perrott furnace, in a crucible, the essence is decomposed in a space comparatively large, in such a way that the volatile portions easily escape. The case is similar where a large vase is fired in a large furnace, the riggers in which the vase is confined contain a number of empty spaces, and in addition, they offer a number of joints through which the volatile particles may escape in such a way that there are no condensations on the vase and hence no collecting of glaze in single spots.

With regard to its action on plates, it is well known that they are enclosed in narrow spaces, in which the circulation of air and of gas is naturally very difficult, hence the volatile particles, unable to escape, except very slowly, react on the surface of the plate, diluting the covering matter and finally leading it into spots. Sometimes condensation takes place on the upper portion of such sagger, and then the essence and perhaps a little moisture, will fall into the center of the plate, carrying with it traces of blue; by the progressive action of the heat, the liquids condensed are evaporated, leaving the blueish zones, to which I have previously referred. In order to avoid all of these accidents, this essence should be substituted by other dilutants; unfortunately, however, none of these give such good results. I was, therefore, obliged to give up the replacing of the turpentine. A certain remedy for the unevenness of the coloring matter consists in drying the blues before the strong firing, in spaces of such dimensions that the evaporation may easily take place. The operation is best effected in our ordinary muffles, at a red heat.

Numerous experiments have shown that this previous heating entirely prevents the uneven distribution of the glaze. Several comparative tests were made, and their results are conclusive. It is, therefore, an accident very easily avoided, now that its cause is known. But this preliminary firing is rather expensive, it would be of interest to discover some means of avoiding this treatment in the muffle. I must say that all trials made for this purpose have, up to the present time, been unsuccessful; the firing of the biscuit in the porcelain furnace especially, has given very bad results.

It is therefore necessary to accept for the time being the baking in the muffle as the only efficacious remedy for this accident. After the baking, the pieces must each be carefully examined to see if the blue has not become detached in spots and to see if there are no fissures or cracks (which would cause other similar defects), and to replace the color at any part where it has been removed or cracked.

Finally I have but to indicate the cause and describe the remedy for the last of the accidents alluded to, the metallization or the black spots. When the blue is baked at a very low temperature, sufficient however for a melted enamel, and when this temperature is prolonged, the color, instead of becoming blue, changes into an intense black; nevertheless it is very smooth. A simple refining at a temperature much higher, and if possible, with a current of air, will bring back the blue in all its beauty.

It is similar with the metallic spots which an insufficient firing sometimes develops. They may be made to disappear by exposing the objects to a "strong firing," and sometimes more satisfactorily if the precaution is taken to recover the spots with a little ordinary enamel.

By following all the precautions which I have laid down, it is possible with sufficient care and a continued watching to avoid all of the accidents liable to occur in the manufacture of the blue by strong firing.

With great pleasure I would express my indebtedness to M. Vogt, at present chief of the chemical department of the manufacture, for the part taken by him in my researches. Also to M. l'ingenier Anscher, who has continually followed my experiments with care and an interest which demands recognition.—*Bulletin de la Societie Chimique de Paris*, 39, 435.

IMITATION FROST—Verre Givre, on hoar frost glass, is an article now made in Paris, so called from the pattern upon it, which represents the feathery forms traced by frost on the inside of the windows in cold weather.

ARTESIAN DYNAMO—An interesting experiment has been tried with the great artesian well which spouts up in the grounds of the Ponce de Leon Hotel at St. Augustine, Fla. Directly over the well, which throws a solid column of water 12 inches in diameter 35 feet into the air, a huge turbine wheel has been placed. Bolted direct to the shaft of this wheel is an Edison dynamo capable of supplying 375 16-candle lamps. Several hundred Edison incandescent lamps have been placed on the walls of the building over the well, and together with the indicating and regulating apparatus connected with the dynamo. The trials in generating electricity in this way by power derived directly from the earth have proved eminently satisfactory as far as the steadiness and constancy of the light is concerned. The experiment is interesting as being the first case on record where natural water power for driving machinery has been derived directly from the earth.

DOMESTIC DIETETICS.

SEASONABLE FOOD.

July.

MEATS.—Beef, mutton, lamb, veal, ham, kidneys, liver.

GAME AND POULTRY.—Pigeon, chicken, duck.

FISH.—Bass, blackfish, bluefish, clams, cod, crabs, eels, flounder, haddock, halibut, lamprey, lobster, mackerel, mussels, perch, porgie, prawn, rockfish, salmon, trout, sea bass, shad, sturgeon, turtle, white fish, whiting.

VEGETABLES.—Beans, carrots, cauliflower, corn, cucumbers, egg plant, garlic, lettuce, onions, parsley, parsnips, potatoes, radishes, rhubarb, savoy, shallots, spinach, sprouts, tomatoes, turnips.

FRUIT.—Apples, apricots, blackberries, cherries, gooseberries, huckleberries, melons, oranges, pears, pineapples, plums, raspberries, strawberries.

PRACTICAL RECIPES.

CHICKEN SOUP.—Cut up one chicken and put it into two quarts of milk; season with salt and pepper. When about half done add two teaspoonfuls of barley or of rice. When this is done remove the chicken from the soup, tear or cut part of the breast into small pieces and add to the soup with a cup of cream.

FRIED CHICKEN.—Fry half an onion chopped fine, in a little butter till quite brown. Roll a piece of butter the size of an egg in flour; add to the onion, and in this fry the breast, legs and side bones of the chicken to a delicate brown. Take them out and keep hot in the oven while you add to the sauce in the pan a few mushrooms finely cut up, and salt and pepper to taste; simmer slowly; pour over chicken and serve.

HASHED POTATOE.—Cut some cold boiled potatoes into small dice, butter a shallow baking-dish, put in the potatoes about half an inch deep, sprinkle with pepper, salt and bits of butter; pour enough milk to cover them over all and bake in a brisk oven till quite brown.

BROILED STURGEON.—Cut a fine piece of sturgeon, skin it and divide into slices about an inch thick, dip them into beaten egg, powder fine bread crumbs, pepper, salt and chopped parsley over them, fold in paper and broil over a clear fire. Send to table with essence of anchovies, soy or Worcestershire sauce.

COOKIES.—Sift together a pint of flour, two teaspoonfuls of Horsford's Baking Powder. Beat two eggs thoroughly and add to them quarter of a pound of creamed butter, half a pound of sugar, nearly a gill of milk, whisk and stir in the flour; roll out the dough quite thin, cut into rounds and bake crisp about twelve minutes.

ASPARAGUS OMELET.—To four well-beaten eggs add two-thirds cup of milk, and one-half cup cold asparagus tops, or cold cauliflower chopped fine may be used, season with salt and pepper, stir together and turn into a hot, buttered pan. As it cooks shake it instead of stirring and loosen with a knife if it adheres to the pan. Fold and slip on to a hot plate, and serve at once.

ROLLS.—Rub into a pound of flour half a tea-cup full of butter; add half a tea-cup of sweet yeast, a little salt, and sufficient warm milk to make a stiff dough, cover and put it where it will be kept warm, and it will rise in two hours. Then make into rolls or round cakes. They will bake in a quick oven in fifteen minutes.

SPONGE CAKE.—Ten eggs, only five whites, beat them together in an earthen pan for half an hour, then add a pound of lump sugar, beaten and sifted, beat the sugar and eggs half an hour longer, then add three-quarters of a pound of flour, well dried, and a spoonful of orange flower water. Mix them well, then butter the tin, put in the cake, and bake it an hour and a half in a moderate oven. Care must be taken that it is put into the oven immediately, or it will not be light. The five whites of eggs left over may be used by mixing them with one pound of fine sifted sugar and one teaspoonful of powdered gum arabic beaten well together and put over the top of cake when baked, and then set in a cool oven a few minutes to harden.

CUP CAKE.—Take one cup of butter, two cups of sugar, three cups of flour and four eggs, two teaspoons Horsford's Baking Powder, nutmeg and rose-water.

BANANA CREAM.—Mash four ripe bananas in a bowl and beat them with the egg beater till they are light. Whip half-pint cream till it is stiff, add it to the bananas with the grated rind of a lemon and a little of the juice and sugar to sweeten. Serve *very* cold.

RASPBERRY CREAM.—Use the above recipe, taking half-pint of strawberries in place of the bananas and a few drops of vanilla instead of the lemon.

PORCELAIN AND CROCKERY.

HOW TO DISTINGUISH THE TWO AND GET THE CHEAPEST.

In order that the reader may thoroughly understand this question, we will now reproduce together the various articles we have already published, and amplify them by details, so that a careful perusal of this article will enable anyone to distinguish between the genuine and the fictitious porcelain, and thus avoid not only being imposed on, but to be sure of obtaining the superior article at a comparatively lower price. In our issue for January 15th, 1888, we published the following:

POISON IN CROCKERY.

When we are compelled to eat at restaurants or in hotels we may find it necessary to console ourselves with the old stereotyped saying that we must, each of us, eat a peck of dirt. We can, as we frequently have to, close our eyes to much that would injuriously effect our appetite. We need not, for instance, reflect that the plates we eat from have been washed in dish water so filthy that it is a question if the water is capable of taking up any more dirt, or if the dirt in the water does not really add filth instead of taking it off. We are not compelled to smell of the plate to verify our suspicions that along with our beefsteak, we are also getting a faint but characteristic odor of the fish which were last eaten from that plate. Nor need we appear to be looking, when the superserviceable waiter adds the few well-known finishing touches, with that classic and altogether too handy adjunct, the side-towel, which as every one knows is religiously kept by that very neat-looking fuunctionary to go through that particular pantomime of an extra wipe for an expected extra *douceur*, but is also employed to wipe off anything that should not be on table or chair as well as the greasy perspiration from the shining face of the African, Gaul, Teuton or Celt whom fortune has compelled us to allow to wait on us, or any portions of the meal which he may have accidently spilled on any one's clothing or boots. All this we may be compelled to submit to, and while it is nasty and even unhealthy it is not absolutely poisonous. But when it comes to eating poison of the most insidious kind with our food it is time to stop. We boldly assert that all American china and glazed crockeryware is enameled with a preparation consisting largely of the red oxide of lead, or as it is commonly known, litharge. This salt of lead is very soluble in the fat acids especially in butyric acid. All fatty foods contain this acid, and when from the frequent alternate expansion and contraction of the enamel or glazing on the various dishes and plates we use on the table, cracks have formed, the butyric acid insinuates itself under the enamel, takes up the lead, and with the food on the plate is taken into the stomach, where, being a cumulative poison, it insidiously poisons the system. Do not let us deceive ourselves by thinking that the quantity of lead is small, but remember that the quantity of lead set free by carbonic acid in the water running through a lead pipe is still less, and yet no less an authority than Professor Chandler has proven conclusively that much lead poisoning is due to this. If this is so, and there can be no doubt of it, then how much more dangerous must be these lead enameled china dishes and plates? We have special reasons for calling our subscribers' attention to this lurking danger, because plates and dishes can be enameled without using lead. At our request Professor Francis Wyatt the well-known chemical expert is making some experimental analyses on this lead enamel, the results of which, with all their startling and interesting facts, we will lay before the reader in an early number.

The Crockery and Glass Journal, of Feb. 20th, 1888, after quoting a portion of this article, attempted a reply under the heading

A WILD STATEMENT.

We do not wish to be harsh with you, Mr. Analyst, but your bold assertion is one you will find very hard to prove. The same assertion, analyzed by methods superior to your own, reveals little or nothing regarding the processes by which the earthenware for domestic use is glazed, in this or *any other country*. With equal boldness we assert that you have never seen a single piece of English or American earthenware of modern manufacture the glaze of which consisted largely of red lead or that *had ever been dissolved by fatty acids*. As a matter of fact, we have never seen *red lead* used in any pottery in this country excepting one, and in that single instance the quality was limited to an extent entirely compatible with the best results of glazing earthenware for household use.

The manufacturers of this particular class of goods both in this country and England use a comparatively small proportion of the white carbonate of lead in their glazes to facilitate the formation of a glassy surface by fluxing the refractory silicates which are really the largest compounds of modern earthenware glazes.

Lead, as a solvent of the silicates in making glazes for the finer grades of fine earthenware, has been largely superseded by the use of boracic acid, which is superior in every respect to either the oxide or carbonate of lead as a fluxing agent in the preparation of the glossy compound applied to the surface of the dishes used on our tables. The amount of lead present in the glazes of such goods as we have designated earthenware is not sufficient to induce disintegration of the surface by the presence of any form of acid excepting fluoric, and it is rank nonsense to assert that the natural acids of cooked foods can have any affect whatever on the surfaces of any table goods made under the present system of glazing. To be susceptible to the dissolving influence of fat acids the glaze compounds must contain *an amount of lead largely in excess of the silicates*, and even then the contact of the acid with the glaze must be continued unbroken for a considerable period of time. If any *sensible* person will take into consideration the small quantity of lead used in proportion to the flint, spar and boracic acid employed by all potters of the present day, and the brief time in which foods come in contact with the surfaces so composed, they will readily see that it is quite improbable that any effect can be produced by the presence of fat acids.

The amusing part of Mr. Analyst's statement is that "crazing" of the glaze must occur before the death-dealing poison can be eliminated. From this it appears that it is only necessary for the fat acids to pass through the cracks in the glaze and get around on the under side of it to set free the insidious poison, as if the side next to the body of the piece contained all the lead in the glaze. In this connection it is rather singular that we have never heard anything of the dire effects of using fine lead glass, and yet we will venture the opinion that the proportion of lead used in the finest glassware is largely in excess of that used in making pottery glazes. In fact, we are sure of it; just as certain as we know that olive oil kept for weeks and months in a fine lead glass cruet will have no more effect on the glass or the glass on the oil than it has in the case of the oil being confined for years in the lime glass bottles in which it comes to us. It will take an extremely fine analysis of the effects of any kind of oils or fats on lead glass bottles to convince a thinking mind that there is any dangerous compounding of the two elements, butyric acid and the lead in glass, and the strongest kind of practical evidence will be necessary to make us believe that any similar affinity can exist between such acids and the glazes of earthenware as it is made to-day, no matter whether it be American, English, or the production of any other country where potting is conducted on the system as now practiced in both of the countries named.

This is not the first time that this silly statement has been made by impractical and theoretical alarmists, but it is so long since we have seen it in print that we had come to the conclusion that a broader knowledge of the pottery business had pigeon-holed it forever. It seems, however, that the same old rot must break out periodically, and that those who profess to be the teachers of the ignorant and unwise must say something silly to maintain the profundity of their utterances.

Also the following:

CROCKERY POISON.

One of the leading subjects of conversation at present is the question that has been raised by the statement in a contemporary that earthenware glazes are poisonous. The argument in this question has been very one-sided, for all parties with whom we have talked are inclined to regard the idea as entirely unreasonable. One of the fairest, frankest statements we have received was from a gentleman who is in a position to know just what the difference is between vitrified hard porcelain and regular earthenware, and we think his opinion on the subject is worth more than any chemical analysis. Having once been a manufacturer of earthenware, he knows what crazing means, and presuming that it is crazed goods that are attacked by the critics and alarmists, he claims that the worst that can be said of crazed earthenware is that it becomes discolored and noisome, and therefore disagreeable and unpleasant. If all earthenware were crazed, this would be the weightiest objection that could be raised against it. But such is not the case, for the proportion of crazed goods found among the productions of earthenware makers is small in comparison with the volume of goods produced. In fact, we are pleased to say that crazing is on the decrease to such an extent that the majority of makers guarantee to replace all crazed goods after a certain time. It is policy to do this for various reasons. In the first place, manufacturers of earthenware are fully aware of the objections that are prevalent to crazed ware, as well as of the fact that it will occasionally occur in spite of all precautions, and they recognize the equity of replacing crazed goods wherever they may be found. It is readily seen, therefore, that it is impossible that any great proportion of crazed goods should get into actual use. Hence the claim that poisonous matter can be absorbed by food eaten from sound earthenware is empty and without reason. Earthenware in its various grades will continue to be made until the chemists can produce something better that can be made equally as cheap, so that it can be bought and used by the masses, and until then people will continue to use it without apprehension of fatal results. It is our belief that if human beings might be exempted from every other danger that threatens life, they might live forever on Dr. Hammond's plan and use earthenware eternally.

On April 1st we published this:

CRAZED CROCKERY AGAIN.

In the accomplishment of our important mission it is constantly our duty to call the attention of consumers to the various dangers which beset them. It is also not unfrequently our privilege to tread—and by no means lightly—upon certain susceptible and very painful corns which obstruct our passage. This being the case, we are as much accustomed to the censure of the exposed as to the approval of the protected, and are neither surprised nor taken aback by the late onslaught of the *Crockery and Glass Journal*. When Bombastes indited his famous distich, relative to confronting face to face whoever should his boots displace, he never for one moment supposed that any one in his vicinity would venture to meddle with his bluchers; and by the same token we may assume that the editor of our contemporary, when he wrote his article of the 20th of February, was under the impression that we should either be frightened by his bluster or silenced by his philosophy.

He cannot have seriously believed that we should "take up his gage," or he would have hesitated ere he rushed into print with such an exhibition of ignorance and weakness, nor should we stoop to do so, were it not necessary that he should learn—as so many others have learned—that when the AMERICAN ANALYST makes a charge, that charge can ever be maintained by figures, and borne out by scientific facts. As most readers will remember, we lately took occasion to remark that when, owing to various causes, the enamel or glaze upon our ordinary plates and dishes has become cracked, the fatty or oily portions of our food insinuate themselves beneath these cracks and there remain until, by decomposition, they have been split up into butyric and other free and corrosive acids. We explained that these acids, so set free, attacked the lead which these crockery glazes contain and transformed it from insoluble into soluble compounds, and that these soluble compounds of lead were thus finally introduced into our stomachs with portions of our food! The editor of the *Crockery and Glass Journal* addresses himself to the repudiation of this charge, and, neglecting his adjectives, we shall best economize space, by recapitulating his denials in the following short order:

First.—He denies that *red lead* and *litharge* are ever used in the glazing of crockery destined for domestic use in this or any other country—*and avers that only white lead is employed!*

Second.—He denies that the lead—whatever be its state of chemical combination—is susceptible to the influence of the fatty acids, *unless it be largely in excess of the silicates* (?)

The initiated mind, it is needless to say, will at once perceive that our critic is no more of a chemist than of a potter, and we shall doubtless be approved, if we endeavor—instead of reconsigning him to his obscurity—to give him some points connected with his profession. At the outset, then, we would inform him that the use of white lead, or basic carbonate of lead, in lieu of either red lead or litharge, is simply a question of convenience, or of prejudice, or taste. In the case of the two latter the difficulty is to obtain them sufficiently free from metallic or unoxidized particles, and this difficulty can only be overcome by frequent washings; while in the case of the basic or hydro-carbonates, they not only generally contain very undesirable impurities, but are besides, deficient in rapid fluxing qualities. This being the case, to quibble over what particular compound of lead is actually used is puerile, not only as regards the issue we have raised, but in virtue of pure chemical laws. Every student of chemistry is aware that white lead, when melted with the other ingredients of a glaze, undergoes a series of transformations, first into litharge and thence into silicates. These silicates of lead, being soluble, are again changed into litharge immediately they are dissolved, and this, were it to be absorbed into the system, would finally resume its original form of white lead in the stomach. When the editor of the *Crockery and Glass Journal* propounds that, in order to work any mischief, "the lead must be largely in excess of the silicates," we feel, like Gil-Blas, "that we must laugh, lest we be compelled to cry." Surely he should know better than this! Surely he does not ignore that the lead can only be present as the *base of a silicate*, and that, if ever, by any chance, its oxide is changed by a reducing flame (as we have sometimes known it to be), the metal at once becomes visible, as such, in the ware.

Again, he says—but he cannot be serious—that the amount of lead is so small as to obviate the probability of any ill-effect from its decomposition by fatty acids. The fact is, that, speaking sanitarily, it is not upon the relative quantity, but upon the *solubility of the lead silicates* that danger or safety depend, and this we will make clear to him, if he will follow us attentively. The glazes of stone china consist, chemically speaking, of mixtures of silicates, or of silicates and borates, the acidity of which may be said to stand in the ratio of 3:1. Of these silicates, orthoclase and albite dissolve only in hydrofluoric acid, whereas the less siliceous feldspars, being of smaller acidity, are soluble in all other strong acids. The trisilicates of lime and magnesia are nearly insoluble; those of the alkalies and of lead are very soluble; while the triborates are more soluble still. Upon analysis, the acid and basic constituents of a good stone china glaze—or rather such as would pass for good—will always be found to obtain in about the oxygen ratio of 3:1. Thus, for example, the components represent differing quantities of the following:

$$\left.\begin{matrix} Na\ (K)_2 + 1\tfrac{1}{2}\ Si\ O_2 \\ Al_2\ O_3 + 4\tfrac{1}{2}\ Si\ O_2 \end{matrix}\right\} = \text{Orthoclase or albite or } \textit{double} \text{ trisilicate of alumina and alkalies.}$$

$$Ca\ (Mg)\ O + 1\tfrac{1}{2}\ Si\ O_2 = \text{Trisilicate of lime or magnesia.}$$

$$Na\ (K)_2\ O + 1\tfrac{1}{2}\ Si\ O_2 = \text{Trisilicate of the Alkalies.}$$

$$Pb\ O + 1\tfrac{1}{2}\ Si\ O_2 = \text{Trisilicate of lead.}$$

$$Ca\ (Mg)\ O + Bo_2\ O_3 = \text{Triborate of lime and magnesia.}$$

$$Na\ (K)_2\ O + Bo_2\ O_3 = \text{Triborate of the alkalies.}$$

If the basicity is increased, the acidity is reduced, and the solubility of each individual compound is correspondingly augmented. If, on the other hand, there are more of acid components, it is true that the solubility is diminished, but if this higher acidity be sought through silica, the glazes will not melt or "flow" in the stone china glaze fire, while if it be sought through the use of a large percentage of boracic acid, they will *craze* rapidly even when cooling in the kiln. It is generally allowed from a hygienic standpoint, therefore, that the best glazes are those made from feldspar, borax and clay; but it is unfortunately equally generally claimed that these glazes are extremely expensive, both at first cost and in their application, and that they have the additional disadvantage of being more susceptible than the lead glazes, to the variations and irregularities of firing. Hence the preference for lead by manufacturers! Can we suppose that the German potters voluntarily petitioned their government to interdict the use of lead glazes? Does the editor of the *Crockery and Glass Journal* think so?

If the statements in our last article were *amusing* they were nevertheless true, and we have endeavored to afford some compensation for their unwelcome character, by rendering those of this one more fully *instructive*.

When the analyses which are now being made have been completed, we shall turn to this interesting subject, meanwhile we will close with a few comments upon *glass*, a subject of which if that were possible, our critic appears to be still more ignorant than of crockery. The temperature at which glass is boiled, is higher than that at which stone china is burned. Hence, *all lead glass* for table ware has a much greater acidity, and hence it is much less soluble than stone china glazes. As an illustration, let us take the composition of so-called "half-crystal" as being

Silica	65.50
Lead oxide	16.
Lime	9.10
Sodium oxide	9.40
	100.00

Here the oxygen ratio is nearly $5\tfrac{1}{2}$:1, and hence the sixteen per cent. of litharge is less liable to cause corrosion of the glass than would be two or three per cent. of the same compound in a stone china glaze.

On May 1st, we said:

POISON IN CROCKERY.

The exposures in these columns of the possible danger arising from the acid glazes in the china ware from which we eat and drink have excited widespread attention. The position of the AMERICAN ANALYST on the subject has not been thus far controverted, nor, in fact, has any view in opposition to it been seriously set forth. The fact is, we were correct. The *Crockery and Glass Journal*, whose interest it is to maintain the absolute innocuousness of earthenware under all circumstances, attempted in its issue of April 1st to reply to our critical discussion of the subject in an editorial article, which we reproduce in another column. The reply, however, is, as our readers will perceive, tame and absolutely unresponsive. It wholly fails to meets the issue. We have more to say on the subject, but the manifest inability of the champion of the other side to maintain a reasonably antagonistic ground has disarmed us. We do not care to press an attack on a fallen foe, especially when, as in the present instance, the "craze" which our opponent is so anxious to underrate, has so manifestly communicated itself to his mental organization.

On May 15th the following appeared:

SOME PLAIN FACTS ABOUT CROCKERY.

Much of the ware properly known as china ware is nothing more than crockery or glazed earthenware. What is known as French china is really hard porcelain, and is made by only one factory in the United States. Hard porcelain is composed in body of clay, quartz and feldspar. This body is fired in buiscuit or the first fire at a low temperature in the second story of the porcelain kiln, using for its baking the surplus heat passing away after having done its greater work in the first story or gloss kiln where the porcelain is finished, or to speak more properly, is made. At this first burning the ware receives only sufficient fire to make it properly fasten together in form. It is quite fragile, easily broken with the fingers, and porous, not having yet had sufficient heat to commence vitrification. In this condition it is porcelain biscuit, and ready for the glaze tub. The glaze of porcelain is composed of the same material as the body, and so compounded that those elements which are soonest fluxed by the influence of the heat, are in greater proportion than they are contained in the body. The porous, low fired biscuit is dipped into a liquid puddle of glaze. Upon being withdrawn its porosity quickly absorbs the excess of water, leaving a dry coating of the glaze compound which was held by the water in suspension upon the surface of the piece. This piece of porous biscuit covered with glaze is now cleaned of glaze upon its foot, or that part upon which it rests, to prevent its sticking or burning fast to the clay sagger or firing case, otherwise the glaze on the bearing parts would at the time of flowing, form a cement, fastening the piece and the sagger together. The pieces are placed separately in the saggers. The heat in firing hard porcelain is carried to such a high degree that the ware touches the point of pliability, almost the melting point. At this point of heat the body is vitrified, at the same time the glaze from its slightly softer composition is melted into the body of the ware, producing a hard, vitreous and homogeneous ware, properly known as true, hard porcelain. This is the only process known to the world to make hard porcelain, and is that used at Sevres, Meissen, Berlin and elsewhere.

The earthenware method is just the reverse of this. The body is composed of much the same materials as a porcelain body, but differently compounded, and it is fired in biscuit or the first fire to a greater heat than a porcelain biscuit, and receives during that first burning the greatest heat to which it is subjected in the entire process of manufacture. The glaze is composed partly of the same materials as compose the body, with the addition of oxide of lead and boracic acid, which latter, being soft, fluxes in the fire, enabling the glaze to flow at a low heat. It is fired the second time in the gloss-kiln at a lower temperature than it has previously been fired in biscuit. The results in flowing the soft glaze over the surface of the ware, making substantially a lead glass film or coating upon the surface of different compounds and materials, not homogeneous, not a part of the ware by being fused into the body as in porcelain. The body and glaze being thus in constant antagonism to each other, produce sooner or later what is

technically called "crazing," or cracking of the enamel, for the reason that the body is one thing produced at a higher temperature and the glaze another, produced at a lower temperature, and not as in porcelain, body and glaze produced at the same time, and at the last and greatest heat. "China" is an English term applied to the hard vitreous ware of China and Japan, from the fact that the first ware of that kind came from China, introduced into Europe by the Portugees, and by them named porcelain, and known only as porcelain in continental Europe. The term "China" has fastened itself upon a pottery ware, but it could have been just as properly applied to any other product of China as silk or paper, had that other product so completely mystified the world so long a time as did their porcelain. Many potteries in England and this country call their wares China, but they are not hard porcelain or true China ware. This explanation will help the reader more fully to understand other and more technical articles.

Again on June 1st:

PLAINER FACTS ABOUT CROCKERY.

We thought that we had stated the difference between hard porcelain and ordinary pottery, miscalled china, very distinctly, but having received numerous enquiries on the subject, we feel compelled to add a few more and still plainer statements. Laying aside the question of lead poisoning from glazed or hard pottery, until our complete analyses are published, we will simply state that so far as we can ascertain, there is but one manufacturer of hard porcelain in the United States, although there are some four or five factories which claim to make hard porcelain. Owing to the more expensive methods necessary to the manufacture of hard porcelain, as explained in our preceding number, this ware costs about twenty per cent. more than the so-called hard porcelain, and for the reasons hereinafter given is far cheaper than the other. As to the practical difference, hard porcelain plates may be placed in a dish or plate heater, heated up much more than any plate ever is heated and plunged into cold water without injury. This cannot be done with any other than hard porcelain ware. Again, hard porcelain ware can have the toughest meat cut upon it with the sharpest knife without receiving damage, while other wares will show the marks of the knife. And thirdly, all other but hard porcelain ware will show the marks of frequent scouring and washing on the face in a very short time.

Finally on June 15th:

HARD PORCELAIN VS. POTTERY.

The various articles we have published on this subject have aroused a great deal of popular interest in this subject, as we judge from numerous letters received, as well as from the frequent quotation of the articles in our exchanges. Though the trade journal in that line, the *Crockery and Glass Journal*, very boldly challenged us to the proof, when the first article appeared, it has since kept very quiet, as if our proofs and the strong array of facts we presented had convinced that journal that they were treading on dangerous ground when they wrote about anything in the pottery line but pottery gossip and free trade. As we want to be fair to both sides, our columns are open to any reply from the manufacturers of soft porcelain, but we, of course, reserve our right of replying editorially. We hope they will accept our invitation. The manufacturers of the imitation ware have kept a discreet silence.



We will now add that the only company manufacturing hard porcelain, commonly but incorrectly called French china, is the Union Porcelain Works of Eckford St., Brooklyn, N. Y., and, that the reader may distinguish this when such ware is offered to him, we here reproduce the trade mark of the Union Porcelain Works, which will be found on the bottom of all their ware.

Figure 1.

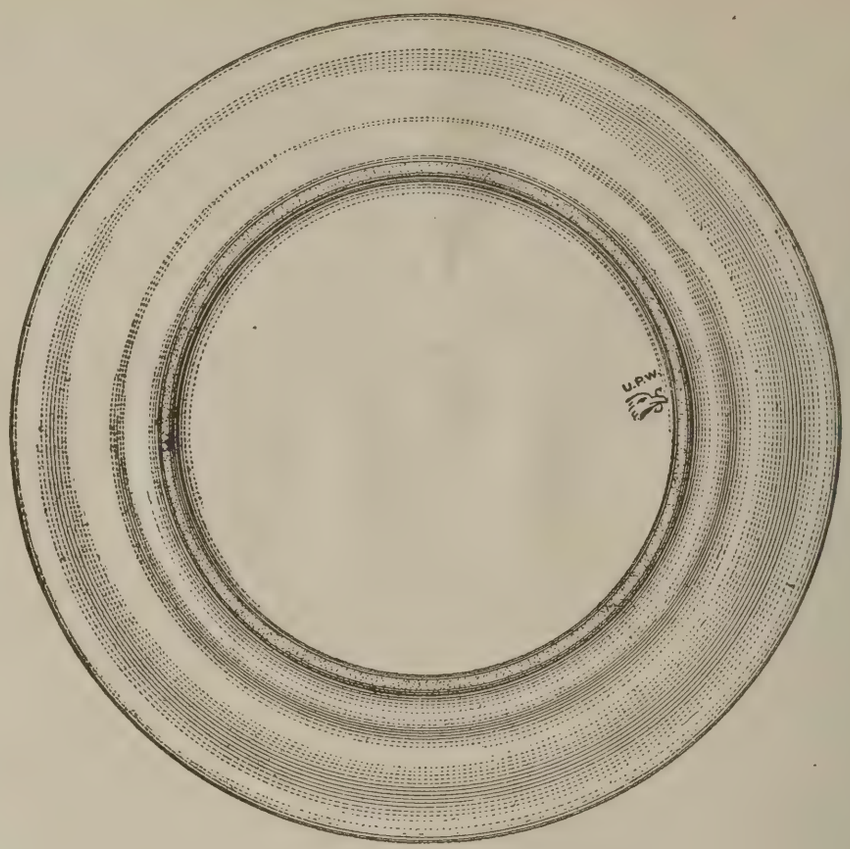
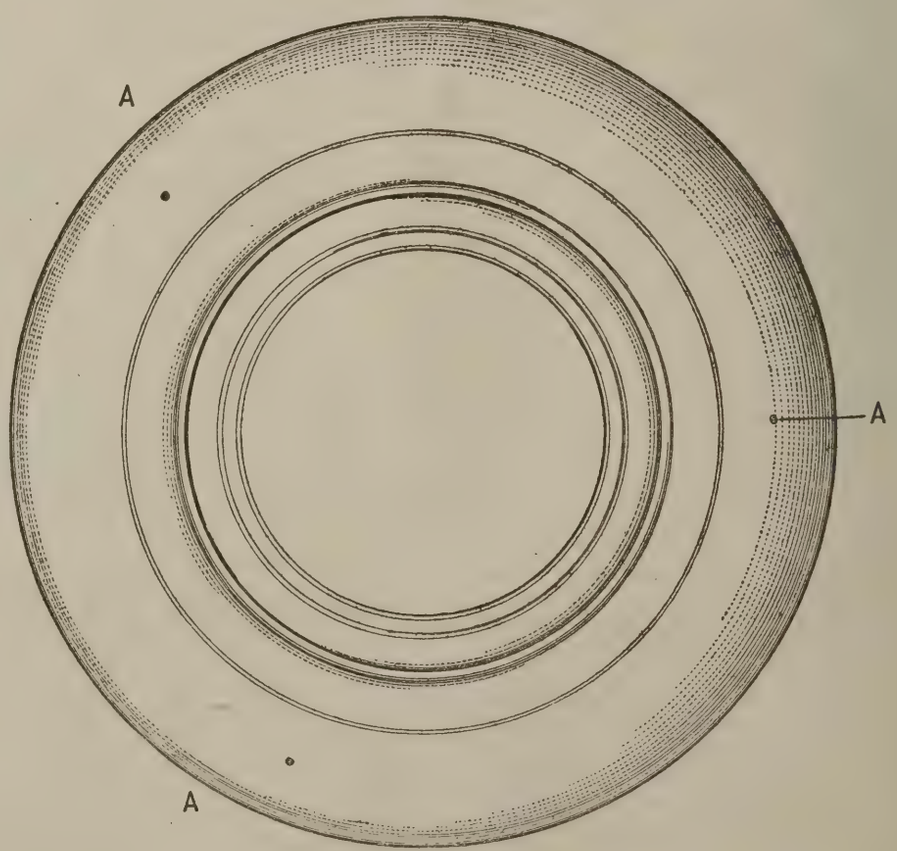


Figure 2.



In the preceding articles we have already stated the principal differences between hard porcelain and its numerous crockery imitations, and have only to say in addition that numerous analyses so far have failed to show any of these soft porcelains which were glazed without the use of lead oxides. We have already said that the glaze of the hard porcelain is composed of the same materials as the biscuit or body of the ware, but, to prevent any misconstruction of our statement, must add that the proportions of these ingredients used in the glaze vary from those used for the body of the ware, in order that better results may be obtained.

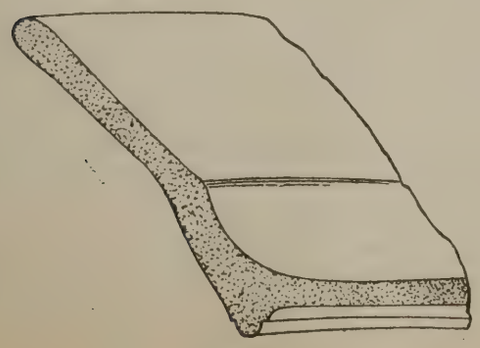
Another fact referred to as to the differences between the hard porcelain and the imitation or crockery, is that the glaze is carefully cleaned from the foot upon which the ware rests in the sagger, so as to prevent its sticking or burning fast to the sagger when firing. This gives a distinguishing mark by which genuine hard porcelain can readily be known. The glaze being cleaned off the foot of all flat goods like plates and saucers, this part is found to be unglazed, while in all soft porcelain, crockery, and other imitations of hard porcelain, the foot is perfectly glazed, unless the glaze had been ground off to deceive, but this can be detected from the fact that in genuine hard porcelain the glaze has been cleaned off a little distance up the foot, which polishing off cannot imitate. This is because in all other pottery the ware is fastened in the saggers in a different manner, as will be explained.

The preceding two cuts will more readily explain the appearance of the foot of these two wares. Figure 1 represents a hard porcelain plate with the foot unglazed —figure 2 a soft porcelain or crockery plate with the foot glazed.

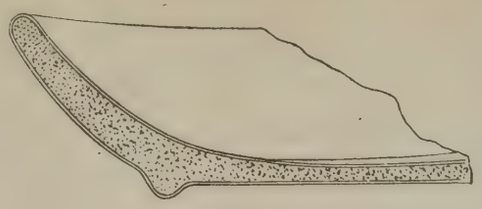
As has been already stated, in firing hard porcelain each piece is separately placed in saggers and only one piece high, resting upon its whole foot part on the sagger bottom. Hard porcelain cannot be stilted, spurred, pinned or slung as soft porcelain is. The consequence is that this difference in method of placing in the saggers gives another clear distinguishing mark between true hard porcelain and that which is not. The marks of this stilting, spurring, pinning or slinging on all except true hard porcelain, usually shows on the under side of the outer rim, sometimes on the foot or bottom, sometimes upon the extreme outer edge of the rim, as is thought to be the most advantageous for the manufacturer to fire his goods. We are now speaking of flat ware only, such as plates, saucers, oval dishes, etc. The cut, figure 2, will illustrate what these marks are—they are shown at A in figure 2.

Another very clear distinguishing mark between true hard porcelain and all others is, when an article is broken, the edges of hard porcelain appear to be all of the same texture, the outer edges somewhat more brilliant. This is because both the body and glaze have been subjected to the same heat, incorporating them into an homogeneous mass, actually fusing the body and glaze together in the highest porcelain heat, while all the other wares, being glazed on a body which has been in the biscuit or first firing, subjected to a greater heat than that at which the glaze is fired, appears to be a vitreous coating or skin on the outer edges or surfaces, having the appearance of two separate and distinct bodies, which is really the case. This is more clearly illustrated by the following cuts—No. 1 showing a sectional view of a fractured piece of true hard porcelain, and No. 2 that of all other kinds.

The sure way, therefore, of distinguishing between the true hard porcelain and all other ware is to turn the article over and carefully examine the bottom. If it bears the trade-mark of the Union Porcelain Works, as reproduced above, you are certain that it is the product of the only American manufactory of that kind of ware. Examine the foot to see if it is glazed or not. If glazed it is not hard porcelain, if unglazed, whether



No. 1.



No. 2.

polished or not, and lacks stilt marks as before described, it is hard porcelain. The terms employed by the various makers to designate their crockery wares, which are not hard porcelain, and by which terms they may mean almost anything, are as gleaned from their various advertisements, vitreous translucent china, hard semi-porcelain, opaque porcelain, vitrified china, Paris porcelain, and a number of others not now in mind.

The difference in first cost of hard porcelain over the so-called vitrified ware or crockery averages about twenty per cent., caused principally by the compulsory method of burning the hard porcelain, the difference of percentage being greater in the flat pieces of the crockery plates, etc., where many can be placed in a sagger and pinned or otherwise fastened, and a very much less difference in such articles as cups, pitchers, etc., where they cannot be so closely packed and supported as are the flat pieces. This difference of cost, however, is only apparent when the difference in quality, durability, general appearance, and having an article that is what it seems to be, is taken into consideration.

Another difference between true hard porcelain and all other ware is in the decoration. Decorators not employed by the manufacturers of true hard porcelain, who are unaware or inconsiderate of the intense hardness of the glaze of these goods do not use the hard colors, nor use fire enough to sufficiently incorporate the decoration with the surface of the glaze, making poor work, very liable to be damaged or wear off. There is, of course, a great difference in the colors employed on hard porcelain and those on other ware with a softer glaze, the latter by far the most expensive. On the former mostly French and German colors, or those made for high fires are used, while on the latter colors that will flux at a lower temperature may be used. These are mostly of English manufacture, and few of them can be properly employed upon hard porcelain. As hard porcelain is frequently bought white and given to ordinary decorators to be decorated, poor work is the result which, is naturally charged to the manufacturers of the hard porcelain. To protect themselves the Union Porcelain Works have been compelled to adopt a decorating mark upon all ware decorated by them. A facsimile of this is also added here for the instruction of the reader.



The presence of this mark (which we understand will be somewhat altered soon), will show what ware has been decorated as well as made by these manufacturers.

HEALTH FLOUR.

DIABETIC FOOD AND GLUTEN.

In the development of milling and bolting, there has been to a certain extent a deterioration or retrogression in the quality of fine flour, whether of wheat, buckwheat or the other cereals. New and improved scientific processes have enabled the miller to save elements of little or no value, heretofore thrown aside, and to combine them with the finer amylaceous and glutenous particles which make up a true food. For this reason the market of to-day abounds with flours which are inferior in every respect. Made into bread, cake or other forms, they give the smallest satisfaction, and in no wise produce the results which are had from the better products of the flour mill. In some instances these flours are objectionable from a sanitary point of view, and are and have been condemned by boards of health. In the main, however, they do not reach the point of being truly deleterious, but are simply inferior, poor or low grade. Comfort, health and prosperity are so dependent upon what we eat and drink, that the consumer cannot afford, on the one hand, to use such questionable foods; nor, on the other, can the grocer and marketman in the long run, to sell such foods to the exclusion of all that is superior in quality. But few citizens have the scientific appliances to test flour, even when they have the requisite knowledge. They must, therefore, depend upon the results of the investigations of experts, or else upon the great manufacturers whose name is a sufficient guarantee of the purity and excellence of their wares, and whose wares are found the length and breadth of the land. In this wise they can easily obtain and enjoy the best.

Many of the great mills throughout the land have tried to make compensation for the fact by introducing special brands of superfine, pure flour, protected by a trade mark, from imitation or fraud. The success of these special brands has been notably great since the first. The flours in question are made by the so-called new process—the difference between this and the old being, that the flour from the former contains more gluten and other albumenoids and less amylaceous, cellulose and lignose elements than from the latter. To the touch, they are dry, crisp and elastic; to the eye, white, uniform and clean; under the microscope, homogeneous and devoid of strange cells and foreign bodies. They are so well prepared that they do not mould, sour nor attract fungoid growths, but keep sweet, no matter how hot or cold the climate.

That we may be able more readily to understand this, let us go a little into the scientific aspect of milling and making flour.

A kernel of wheat consists of the outside cellulose covering, under which there is a layer of six-sided cells in the form of cobblestones, these are the gluten cells, consisting largely of protein and fat substances, and under this are the five or six-sided cells forming the bulk of the kernel, and consisting of the starch cells and a small quantity of protein substances. In grinding these kernels, the harder cellulose hulls with the attached gluten cells are separated from the softer starch-cells, and as the former withstand the action of the mill stones or rollers better, they go with what is called the bran. The cleaner a flour is of bran the less it will contain of protein substances. The bran contains about 14 per cent. protein, while the interior of the kernel contains only from 10 to 11 per cent. It is a mistake, however, to believe that the finer flour is not nutritious, but, on the contrary, owing to its being more readily digested, especially by those having weak digestive powers, is more readily assimilated. Good flour contains from 12 to 15 per cent. of gluten and about 60 per per cent. of starch.

Wheat differs materially in its composition, according to the specie, quality or ground, climate and season in which it has been grown. The method of grinding also varies. We will only refer to the three principal methods now. The oldest method is that of flat millstones separating the kernel with the least possible destruction of the bran, and the bran is separated from the flour by bolting. The other method is the so-called Hungarian, which grinds or rather breaks the kernels into larger pieces, and then smaller, the bran being gradually removed between each breaking up. In this process rollers have been substituted for the millstones. The third process of flour making is the so-called dismembering process, where the wheat is crushed between rollers and then beaten out between disks. Each of these processes has its advantages and disadvantages, and are employed according to the judgment of the miller.

The chemical composition of average wheat flour is as follows:

Water	13.34
Nitrogenous substances (gluten, etc.)	10.08
Fat	0.94
Sugar	2.35
Gum and dextrin	3.06
Starch	69.44
Cellulose	0.31
Ash	0.48

or, when dried,

Nitrogen	1.86
Carbo-hydrates	86.37

According to Gerard. the outer hull or bran, which forms 14.36 per cent. of the kernel is sub-divided into the pericarp, testa and seminal tegument chemically contain as follows:

	Pericarp.	Testa.	Seminal Tegument.
Water	3.51	0.92	7.12
Cellulose or non-nitrogenous substances	24.43	5.06	29.89
Nitrogenous substances	2.41	1.25	15.32
Mineral substances	0.65	0.46	3.38
Fat			5.60
Total	31.	7.69	61.31

Making a total of 100.

As has been said, the chemical constituents of wheat flour vary materially, depending upon the species, fertilizing, soil and especially the climate, therefore the use for which the flour is intended must ever be borne in the mind of the miller in the selection and blending of the wheat he employs and in his treatment of it.

Very little is positively known of the actual chemical composition of the various component parts of wheat, and a great variety of opinion prevails among scientists as to the relative merits and demerits of these parts as foods. Where doctors disagree who shall decide? It is safe, therefore, to turn from the varying opinions of scientists to the practical experience of the millers and those who use the product. Especially is this true in the preparation of a flour to make bread for those who suffer from diabetes, a disease wherein sugar is to be avoided. We know that starch is converted in the system into sugar, and therefore it is generally supposed that a flour containing no starch whatever, or rather the gluten of a flour, would be the best food for such. Unfortunately, however, bread cannot be made either palatable or digestible from gluten, hence some starch must be used. Some physicians have gone so far even as to recommend bran to be used, but they surely must have forgotten that bran is not only very indigestible, but is actually a mechanical irritant, and as diabetics generally have very poor digestion any way, bran bread or crackers are surely not safe to recommend for such use. In the absence of any agreement among scientists we are therefore compelled to work on as well as we can with such light as is furnished by the experience of physicians at the bedside and by patients themselves. These agree on one point, that is that they have had good results from using the various preparations of flour made by Farwell & Rhines. Having this positive and unanimous evidence on one side, and only the opinions of scientists disagreeing on the other, it is easy to decide which to follow.

It may, therefore, be readily understood from what has been said, that to obtain a good, well made flour the purchaser must depend upon the reputation for honesty and skill of the miller. With this understood, we will now proceed to an investigation of the products of Farwell & Rhines, of the Crescent Mills, Watertown, N. Y., an illustration of whose plant we here give, but which hardly does justice, as the photographer was not able by a front view to give an adequate idea of the size and extent of these mills. The principal products of these mills are gluten flour, special diabetic food, health flour, crystals, pearl barley, Graham flour and choice family flours. We will speak of these in rotation.

Gluten flour is a bread and gem flour, substantially free from starch, made especially for those suffering from diabetes and dyspepsia, and is a tonic and waste repairing food. The confidence of the manufacturers of this flour in the value of their product is best shown by their offer to send a sufficient quantity of it, free of charge, to any one who will pay the express charges thereon, so that the same may be fully tried under the supervision of the physician. So far they have received the strongest endorsements of their goods from those who have tried them, and in only the rarest instances has any complaint been made. This is much better evidence than mere abstract theory. It is, of course, well known that no flour that will make bread fit to eat can be entirely free from starch, and even bran, which is unfit for human food, contains considerable starch—pure gluten makes gum, not bread. If bread is necessary for a patient, and it seems to be, wisdom would indicate that it should be furnished in a form where it will do the least injury, and this form certainly seems to be proven by the practical experience of those best competent to judge the gluten flour of which we here speak. This flour is also good for general family use, and as it keeps well anywhere and goes much further than ordinary flour, it is not really dearer than ordinary flour.

It is prepared with the advice of experienced and practical physicians and chemists to meet a serious and growing want on the part of sufferers from dyspepsia, diabetes, lung troubles and nervous debility, and all who need a tonic and waste-repairing food, without "gluten" imported from Paris at great cost. It is a little less palatable than "gluten flour," but works well in bread, biscuit, gems, griddle cakes, mush, etc. As a diabetic flour it defies competition in this country or Europe. For severe cases of diabetes this should be ordered.

One inevitable result of the constant intercourse of these manufacturers with the medical profession and sufferers from dyspepsia, diabetes, &c., has been a great demand for a first-class health flour or family flour for all uses, which should be—not a cure—but a preventative of disease, comparatively free from starch, (the fermenting and heating property in grain,) abounding in gluten and the phosphates, a brain, nerve, bone and muscle building flour, invaluable to all who need a recuperative and invigorating food, and in all families with children.

It requires the life and strength, extracted by a peculiar process, from about thirty bushels of three kinds of the best wheat to make a barrel of it. Hence it costs more than common flour, but it makes much more and better bread, and in nutritive, health-giving value, they are not to be compared.

A comparatively new product made by these mills, and one which will rapidly win favor with the public, is a preparation of barley called crystals made from the



which, in many cases, medicine will be comparatively without avail; therefore the medical profession heartily approve and advise its use. It is substantially free from starch, the basis of other flours, oatmeals and cereal preparations, which should be studiously avoided by the diabetic, as they produce acidity, flatulence and indigestion in dyspeptics. It is entirely without bran, so largely found in Graham and other flours, which only irritates and does not digest in the human stomach. It is a brain, nerve, bone and muscle-building flour, containing to the fullest extent the life-giving and nutritive elements of three kinds of the best wheat, only a small part of the wheat kernel being used in its manufacture, yet at a price within the reach of most people requiring such flour. Too much cannot be said of its value as a food for infants or a bread flour for children and nursing mothers, and when simply prepared with milk in the form of porridge or pudding is a delicate and acceptable nutriment in severe stomach and intestinal troubles. It has also been found a highly important aid in the practice of the most scientific dentists, strengthening the teeth and promoting the health and growth of the gums.

To prepare this flour, years of study and great expense have been necessary.

The special diabetic food is a flour for extreme cases of diabetes, a more crude gluten, pronounced by the highest authority to contain much less starch than the heart of the barley kernel. It is entirely free from bran or hulls, rich in color, delicate and delicious in flavor, and of rare nutritive value. It is an invaluable nutriment in fevers and gastric troubles and acts as a mild diuretic. Unlike any of the cereals prepared from wheat, rye, barley, oats or corn, all of which contain from 8 to 15 per cent. of hard, dry, indigestible and irritating lignose; cellulose and fibrous matter these crystals contain only a trace of these elements and therefore have over 99 per cent. of the purest flesh, blood, brain, nerve, bone and muscle building food unequalled for ease and rapidity of digestion and assimilation.

It is needless to say that all these preparations are the best that skill, experience and capital can make, and a very careful examination, both scientific and practical, has shown that every claim made by the manufacturers have been fully confirmed as true.

Full directions for use accompany all these goods, and samples will be sent free as above mentioned.

The mills also make a superior quality of pearl barley Graham flour and choice family flours of all grades.

PRINTING POSTAL CARDS—The new machine just invented for printing postal cards prints them from the roll and turns them out in packages ready for delivery. It runs them of at the rate of 300 a minute, with paper bands pasted around each 25. It is said that one man can look after two machines.

"OVERWORKED KIDNEYS AND LIVER."

In the the warm season of the year in temperate climates, and the year through in the tropics, there is an immense amount of pain and sickness suffered by young and old, which is ascribed, both falsely and truthfully, to overworked kidneys or liver. While these disorders vary greatly in character, painfulness, and danger, they have all a common cause. The kidneys or the liver suddenly refuse to act or else act in so unnatural a manner as to suggest the idea of organic fatigue. Careful study and scrutiny make all complaints of this class very simple and enable us to cure them with the greatest promptness and ease. In the first place, these disorders show the blood to be laden with impurities. Instead of the clean and brilliant current, life and health-giving, it is a foul and muddy river, ever ready to produce some form of disease. Nature, in her effort to dispel these humors, increases the activity of the kidneys and liver in a never-ending attempt to remove the impurities from the system. At the same time there is little or no active vitality in the body. The lymphatics are week, the stomach enervated, and the nerves shattered. In almost every case, there is malaise or nervous prostration. The kidneys or liver grow weaker and weaker. This is succeeded by spasmodic action and then by disease. According to the individual, this takes one form or another. It may be a simple congestion, a bilious fever, a jaundice, uremia, or a hundred complaints for which science, and not plain English, has a name. In the case of babies, it frequently takes the form of cholera infantum and with those of larger growth, of cholera morbus, two diseases which sweep away hundreds of thousands of lives every year, in both the Old World and the New. Yet nine-tenths of this terrible total of disease and death is absolutely unnecessary and is a fearful commentary upon the carelessness and folly of the public. Nine-tenths can be prevented, and even of the remaining one-tenth a goodly fraction can be easily cured.

All that is needed is to assist Nature in the purification of the blood and to equalize the strain which, without artificial assistance, is thrown upon one organ or another with such sad results. To do this, requires the use of the blood purifying agencies, which science has discovered and made the property of the world. In Honduras Sarsaparilla, yellow dock, podophyllin, and stillingia in the vegetable kingdom, and in the double iodides in the mineral, we have substances which are invaluable singly, and which, when combined, make the purest, most efficient, and benign specific known to mankind. Yet, only in one instance, has the combination been so perfectly made as to receive the praise of the medical faculty and the scientific world, and that is in the famous Extract of Sarsaparilla, made by Dr. J. C. Ayer & Co., of Lowell, Mass. In this superb remedy, all the substances mentioned are used in their highest purity and freshness. They are treated, in vast quantities by the latest chemical methods and processes, and, therefore, yield an article which is uniform in strength, excellence and efficiency. Ayer's Sarsaparilla stands in singular contract with these other preparations whichvary in color, taste, odor, composition, in short, everything except the name. These are nominally blood purifiers, but are either inert or positively harmful in their effect. With Ayer's Sarsaparilla, the action is always beneficent, mild and life-giving. Taken judiciously it prevents that strain on the liver and kidneys which is so injurious, it dispels all humors from the system, and swiftly restores health and strength. This is the secret of its success in all tropical countries, and this should recommend it to all who view the summer as a season of possible sickness and pain.

BUSINESS NOTES.

CASCARA SAGRADA.

The medical world secured a treasure in *Cascara Sagrada*. Although it has been only ten years before the public it has assumed an importance of a very high kind. Under its American names, California Buckthorn or Mexican Buckthorns, it has long been a favorite spring medicine and mild aperient with the people of the Pacific Slope. Their knowledge of the virtues of the plant were derived from the monks who in the last century made a special study of medicine, and who, on account of the remarkable qualities they discovered in it, named it *cascara sagrada*, (holy or sacred bark). These, according to their own statements, obtained the beginning of their knowledge from the now extinct Aztecs. The bark was used at first in the form of a powder or a tea. Subsequent investigations have shown that these two forms are irregular and untrustworthy, and that the best results are obtained from a fluid extract or elixir. One point must be born in mind by every physician, *cascara sagrada*, when fresh, is a very powerful cathartic, closely resembling croton oil in physiologic action. In very large doses it has, like the latter, produced fatal results. So far as its various ingredients are concerned its drastic action seems due to one or more of a series of resins which it contains. When cured by exposure to the sun, or by dessication or by long standing in a warm, dry place, the resins are oxidized and the bark changes from a drastic purgative to one of the mildest and most efficient laxatives known to medicine. It is in this form that *cascara sagrada* has gained its present high reputation. Unlike most of the leading laxatives it exercises no influence upon the appetite and digestion, produces no griping or enteric pain, and does not excite the secondary nervous system in any appreciable way. For this reason it is invaluable in constipation, and especially in those numerous cases where the latter is chronic in character. This alone should make the remedy official and place it high among medicaments. Recent experiments have demonstrated that *cascara sagrada* has even a greater value, and is of the greatest benefit in rheumatism. Dr. H. T. Goodwin, U. S. N., has used it upon himself and thirty other cases, and excepting those instances where there was a strong syphilitic or scrofulous taint, obtained quick cures in all. He used a small dose (1½ cu. cen:m.) so small as to have little or no effect upon the bowels. He has since been followed by other phy-

Horsford's
ACID PHOSPHATE.

A preparation of the phosphates of lime, potash, magnesia and iron, and phosphoric acid, in solution, that is readily assimilated.

Especially recommended in all cases where the use of phosphoric acid or the phosphates is indicated, such as exhaustion of the physical, nervous and cerebral systems, gastric and liver derangement, gravel, and other calcareous deposits, cholera, scurvy, consumption, etc.

As a menstrum for the administration of strychnina, morphina, quinina, and other organic bases which are usually exhibited in acid combination, it is unsurpassed.

It makes a delicious drink with water and sugar only, and harmonizes with such stimulants as are necessary to prescribe.

Dr. G. F. WILBER, Nashua, N. H., says: "It is a very elegant method of using phosphorus."
Dr. T. C. SMITH, Charlotte, N. C., says: "I attach the highest importance to it as a therapeutic agent, of well-defined and specific value."
Dr. C. EARLE, Pontiac, Mich., says: "I do not hesitate to recommend it to the confidence of the profession."
Dr. T. B. PORTER, Freeport, Ill., says: "It is an excellent therapeutic agent."
Dr. I. W. MARTIN, Des Moines, Ia., says: "I take pleasure in adding my testimony as to its therapeutic value."
Dr. E. BROWN, Omaha, Neb., says: "I find it a very useful remedy."

Send for descriptive circular. Physicians who wish to test it will be furnished a bottle on application, without expense, except express charges. Prepared under the direction of Prof. E. N. HORSFORD, by the

Beware of Substitutes and Imitations. RUMFORD CHEMICAL WORKS, PROVIDENCE. R. I.

sicians whose reports corroborates his experience. In every case thus far where the results did not correspond with the physiologic theory it has been found that the *cascara sagrada* employed had not been of standard quality. In most instances a half-cured or improperly cured had been used. The former exerted a cathartic action of a powerful nature and induced gastric and enteric pain. In the latter, no results at all were had. But in every case where the standard article was applied, the same success was enjoyed. As the fluid extract is not yet officinal the profession can not be too careful as to the sources of their supply. While there may be, and probably are a few manufacturing chemists who prepare a perfectly standard, thus far only one establishment, that of Parke, Davis & Co., have made a specialty of *cascara sagrada* and its preparations. Too much can not be said in praise of their care in selecting the bark, their thoroughness in curing and aging it, and their skill in putting it into pharmaceutical form. For general use, their fluid extract is not only the best, but is the only standardized article of which we know. Its purity, freedem from the raw cathartic resins, uniformity and general excellence make it an invaluable addition to the *materia medica* of both the medical and pharmaceutical professions.

BLACKING AND SHOE POLISH.

It would seem that very little can be said of general interest about such a commonplace subject as shoe polish, and yet it is quite important. The best and most generally known blacking is Day & Martin's, which is an English liquid blacking, but will never become popular in this country because of its impracticability. The other foreign blackings have each their peculiarity. The English paste blacking is not black and dries out too quickly. Of the French, the best known, that of Jaquard, is a poor product, only made to utilize the scraptin left over from the owner's manufacture of tinware by selling it as blacking boxes, and the German has no gloss. Of American blackings, Lee's, which was one of the oldest, is practically out of the market, as the present owner of that trade mark has long since ceased to use the original formula. Mason, of Philadelehia, who held undisputed sway of the market, has been gradually compelled to withdraw from here and find his sales at home and in South America. The widest known blacking is that of Bixby, who, under the trade mark, "Bixby's Best Blacking," or the "Three B's," for his paste blacking and "Bixby's Royal Polish," for his shoe dressing, now practically controls this market, and exports enormous quantities to South America, Europe, and even as far as Australasia. To England mostly the shoe dressing for ladies is sent. The firm of S. M. Bixby & Co., who occupy an immense five story building on Hester street for their manufactory and offices, may be taken for an apt illustration of how from little acorns great big oak trees grow. About thirty years ago Mr. Bixby was in the retail shoe business, and hit upon a novel advertising plan of making a shoe blacking to give away with each sale of his boots and shoes. Long experimenting enabled him finally to make such an excellent article that a sale sprung up for it which gradually increased until it has now attained an annual sale of nearly half a million of dollars. At first he could hardly give his blacking away, but by perseverance, constant improvements in quality, and attractive putting up with ingenious devices for holding the box without soiling the hands, novel advertising methods by taking pictures and in well chosen mediums (Mr. Bixby always advertises in the AMERICAN ANALYST), he has gained public confidence and an enormous demand for his goods. One thing in addition may be truthfully said of Mr. Bixby—that is, that he is constantly on the alert for every possible improvement of his goods, without regard to expense, so that he can conscientiously maintain the high standard of "Bixby's Best."

AN UNPRECEDENTED AWARD.

We were shown a beautifully framed collection of facsimilies of a group of medals awarded to Nestle's Milk Food by thirty juries in all quarters of the globe. We take pleasure in noting this unusual, and hitherto unattained, award of twelve Diplomas of Honor having been given Nestle's Milk Food. We have known Nestle's Food for some years, as being one of several infant foods in the market, but we are free to confess we have not hitherto known that this food enjoyed such preeminence in European centers as this group of medals indicates. Any preparation that goes into competition before the juries of thirty World Expositions, and bears away 18 gold medals, and in twelve instances the coveted diploma of Honor, must possess a very high order of merit. This is the record that Nestle's Food offers to the scrutiny and intelligence of the medical profession, after being in succesful and general use over twenty years. As the hot weather is now doing its fatal work among infants in our large cities, we deem it a timely service to our readers to call attention to this food, which courts the test of trial at a season of the year which would be disastrous to the proprietors if the food failed to fill the bill.

VIBURNUM COMPOUND.

The therapeutic effect of the three principal ingredients of Virburnum Compound is specific and the combination has an effect still different from each.

BROMO SODA.

NEW YORK, *April* 25, 1888.

BROMO SODA :—Have returned from a most enjoyable trip through the Leeward and Windward Islands, and in answer to yours of March 5, would say that your Bromo Soda is especially well spoken of. It was used on a number of passengers with best results, and was purchased by many of them from druggists in Trinidad. I enclose testimonial of Dr. Geib, Stamford, Conn., who was a passenger. He was Surgeon General of Connecticut under Gov. Buckley, and is one of the leading physicians in the Eastern States; he says you can use the testimonial in a moderate form, but does not wish it advertised "broadcast."

R. J. SEABURY.

A PORTABLE DAM—A Pittsburg mechanical engineer has invented a novel movable dam, by the use of which he claims a boating stage of water may be obtained in shallow water at all seasons of the year. The invention has been examined by old river men and pronounced practicable. The inventor is 82 years old.

CLEAN TOYS.—Infants' toys should be systematically cleansed. The child beslavers the implement several times a day, and leaves saliva in the rattle or whatever it may be as a culture bed of bacteria. This condition of things goes on till the toy is a magazine of animal poisons to contaminate and recontaminate the innocent victim of thoughtless inattention.

DISTRIBUTION OF DISEASE.—Scarlet fever is at its minimum from January to May, and at its maximum in October and November. Diphtheria is more evenly distributed through the year, and is most dangerous a little later than scarlet fever. Measles and whooping cough seem to be somewhat aggravated by cold weather, but are most fatal in May and June. Hot weather is adverse to small-pox, and favorable to disorders of the bowels, particularly in children.

WATER IN LONDON.—The average daily supply of water delivered from the Thames to London consumers during last May was 80,338,932 gallons; from the Lea, 57,047,492 gallons; from springs and wells, 19,116,275 gallons; from ponds at Hampstead and Highgate, 2,023 gallons. The last is used for non-domestic purposes only. The daily total was, therefore, 156,534,722 gallons for a population aggregating 5,456,587, representing a daily consumption per head of 28.68 gallons for all purposes.

BOVININE, BUSH'S FLUID FOOD,

Is the ORIGINAL and ONLY preparation of RAW FOOD that does not become putrid and disgusting in a short time.

A MOST WONDERFUL NUTRIENT.

The vital principles of Beef and Mutton concentrated. A highly condensed Raw Food Extract. Acceptable to the most delicate taste and smell. Retained by delicate stomachs that reject all other foods It assimilates more readily than any other food known to the medical profession. Bovinine under the microscope shows the blood corpuscles in their normal condition strongly marked, while in other foods or extracts this vitally important element is destroyed by the action of heat in cooking.

Containing 26.58 Per Cent. of Soluble Albuminoids,

According to OSCAR OLDBERG, Ph.D., Professor of Chemistry and Toxicology, and Dean of the North-Western College of Pharmacy.

A. L. LOOMIS, M. D., Professor in Medical Department of University of New York, says: "I prescribe Bush's Fluid Food or BOVININE, and prefer it to similar preparations."

J. S. JEWELL, M. D., Chicago, says of Bovinine: "I am delighted with it; it is what I have been looking for these twenty years, and it supplies a want that nothing else has been able to fill."

DRS. WARD and FRED. SMITH, speaking for themselves and their colleagues of the Hospital of St. Barnabas, Newark, say: "Bovinine was readily taken by the patients, was easily retained, and in many cases by stomachs which had rejected all other forms of nourishment. We believe Bovinine contains more nutriment, relative to the bulk, than any other preparation known to the medical profession."

"During the last four months of his sickness, the principal food of my father, General Grant, was Bovinine and Milk; and it was the use of this incomparable food alone that enabled him to finish the second volume of his personal memoirs.—FRED. D. GRANT."

October 1st, 1885.

Carefully prepared from the formula of the late James P. Bush, by the J. P. Bush Manufacturing Co., 44 Third Avenue, Chicago, Ill.

PUT UP IN 6 AND 12 OUNCE SIZES, AT 60c. AND $1.00 PER BOTTLE.

For Sale by all Druggists.

Principal Office, 2 BARCLAY STREET, NEW YORK CITY.

YELLOWSTONE NATIONAL PARK, PACIFIC COAST AND ALASKA.

The Yellowstone Park is unquestionably attracting more attention at the present time, as a tourist resort, than any other place on the face of the earth. This spot is reached by rail only by the Northern Pacific Railroad, the famous dining-car line to the Pacific Coast, the only one of the transcontinental lines running dining cars of any description whatever. A book ticket will be sold at the Eastern terminals of the Northern Pacific for $110, including rail and stage transportation, meals on dining cars, Pullman and five day's accommodations south of Livingston in the Park.

The Alaska tour is also one that is attracting wide attention. The rates and facilities offered for making this trip are better via the Northern Pacific Railroad than by any other line. The attractions offered *en route* via the Northern Pacific, such as the ride through the Lake Park region of Minnesota, by the great wheat fields of Dakota, along the Yellowstone River and Clark's Fork of the Columbia, through the famous Spokane Falls region, over the Cascade Range by the Palisades of the Columbia, Puget Sound, etc., together with the superior accommodations offered, make a trip by this route especially enjoyable. By writing Charles S. Fee, General Passenger Agent, M. P. R. R., St. Paul, Minn., you will receive copy of "Wonderland" and other books descriptive of the Yellowstone Park, Alaska and the country in general traversed by the "Dining Car and Yellowstone Park route."

ECCENTRIC NAMES.—In the United States there are only eight post-offices whose names begin with the letter "X." They include five "Xenias," two "Xerxes," and one "Xenophone."

OUR SPECIALTIES ARE

Choice Bottled Ciders

—AND—

Pure Cider Vinegar,

For Hotel and First-Class Trade.

T. P. ROGERS & SON,

370 to 376 Washington Street,

NEW YORK.

Good Agents

To obtain Subscriptions for

AMERICAN * ANALYST

WANTED ON LIBERAL TERMS

VARIETIES OF PENS.—A man in Denver has a collection of over seven hundred pens, no two alike. Some are of steel, some gold, some amalgam, and so on. There are pens pointed fine enough to make lines of microscopic delicacy, and others intended for men who use the first personal pronoun a great deal in their correspondence. These are of the "stub" variety, and make a mark, when required, such as a tar brush would. The collection embraces specimens from England, Ireland, Scotland, Germany, and other European countries, besides America and Canada. Some are in shape like shovels, others resemble a section of stove-pipe, and others are delicate and diminutive.

SMART BOY.—"What are some of the products of Peru?" asked a Springfield teacher of one of her bright boys.

"Saltpetre and guano," was the reply.

"What is guano used for?"

"To make jelly of."—*Springfield Union.*

ABSOLUTE ALCOHOL—If gelatine be suspended in ordinary alcohol it will absorb the water; but as it is insoluble in alcohol that substance will remain behind, and thus nearly absolute alcohol may be obtained without distillation.

LEA & PERRINS' SAUCE.

Lea & Perrins', the original and genuine Worcestershire Sauce, has been before the public over a half a century. Like all popular favorites it has long been the standard of comparison and the pattern for counterfeiters who not being able to imitate its excellence offer to the public imitations in bottling, labels and style of putting up. They dare not counterfeit the signature of Lea & Perrins which is on the red label of every genuine bottle, and of which this is a facsimile.

Lea & Perrins

To be sure of obtaining the genuine article, see that the above signature is on the label.

ANALYZE "MONON" Resolutions!?

Whereas, The Monon Route wishes to make known to the world that it has the finest system of Pullman Buffet Sleepers and Chair Cars, running between Chicago and Louisville, or Chicago, Indianapolis and Cincinnati;

And Whereas, This makes it in fact the double connecting link of Pullman travel between the winter cities of Florida and the northern summer cities; then

BE IT RESOLVED, That, before starting on a trip, be sure and address E. O. McCormick, Gen'l Pass. Agent, 185 Dearborn Street., Chicago, for rates, etc.

Natural Lithia Water.

FARMVILLE LITHIA WATER

FROM VIRGINIA.

—*Not only Relieves, but*—

CURES

Bright's Disease, Kidney Troubles of all Kinds, Rheumatism, Rheumatic Gout, Dyspepsia, Bladder Troubles, Diabetes, Calculi, Albuminuria. Without Taste or Odor. An Unapproachable Record in Results.

Sold by HAZARD, HAZARD & Co., Fifth Avenue Hotel, and other first-class Pharmacists. Pamphlet free upon application.

FARMVILLE LITHIA SPRINGS CO.,

298 Broadway, New York, and Philadelphia.

Subscriptions $1 per year. Now is the time to subscribe.

SILK AND SATIN RIBBONS FREE!

LADIES, THIS IS FOR YOU!



A rare gift for the ladies. Save much money and secure the best! Every lady knows and appreciates, the privilege of having a few remnants of ribbon, handy for the thousand and one tasty and useful purposes for which such goods are used, and which they, the ladies, use to such advantage. To purchase what is wanted at the usual prices such goods are sold for, would create a large bill of expense, and therefore debars a great many from indulging their tastes in this direction. Realizing that there were thousands upon thousands of remnants of ribbons among the large importing houses of America which they would be willing to dispose of in bulk, for a small fraction of their cost, to any one capable of purchasing largely, we instituted a search, resulting in our obtaining the entire stock of **Silk and Satin Ribbon Remnants** of several of the largest of these houses, who imported the finest goods. These goods may be depended upon as superior to anything to be found, except in the very best stores of America. Yet they are given away **free**; nothing like it ever known. A grand benefit for all the ladies; beautiful, elegant, choice goods absolutely **free.** We have expended thousands of dollars in this direction, and can offer an immensely, varied, and most complete assortment of ribbons, in every conceivable shade and width, and all of excellent quality, adapted for neck-wear, bonnet strings, hat trimmings, bows, scarfs, dress trimmings, silk quilt work, etc., etc. Some of these remnants range three yards and upwards in length. Though remnants, all the patterns are new and late styles, and may be depended on as beautiful, refined, fashionable and elegant. **How to get a box containing a Complete Assortment of these elegant ribbons Free. The Practical Housekeeper and Ladies' Fireside Companion,** published monthly by us, is acknowledged, by those competent to judge, to be the best periodical of the kind in the world. Very large and handsomely illustrated; regular price 75 cts. per year. Send **35** cents and we will send it to you for a trial year, and will also send **free** a box of the ribbons; 2 subscriptions and 2 boxes, **65** cts.; 4 subscriptions and 4 boxes, **$1.** One-cent postage stamps may be sent for less than $1. Get 3 friends to join you thereby getting 4 subscriptions and 4 boxes for only $1; can do it in a few minutes. The above offer is based on this fact—those who read the periodical referred to, for one year, want it thereafter, and pay us the full price for it; it is in after years, and not now, that we make money. We make this great offer in order to at once secure 250,000 new subscribers, who, not now, but next year, and in years thereafter, shall reward us with a profit, because the majority of them will wish to renew their subscriptions, and will do so. The money required is but a small fraction of the price you would have to pay at any store for a much smaller assortment of far inferior ribbons. Best bargain ever known; you will not fully appreciate it until after you see all. Safe delivery guaranteed. Money refunded to any one not perfectly satisfied. Better cut this out, or send at once for probably it won't appear again. Address,

H. HALLETT & CO., PUBLISHERS, PORTLAND, MAINE.

Ask Grocers for our Patent Barley **CRYSTALS,** a new, unrivalled **Cereal Food,** for Breakfast Tea & Dessert. If not sold there, write us for free samples. **GLUTEN FLOUR** and **SPECIAL DIABETIC FOOD** are invaluable waste-repairing flours for **Dyspepsia, Diabetes, Debility & Children's Food.** No bran; mainly free from starch. For all family uses nothing equals our **HEALTH FLOUR.** Send for circular offering 4 lbs. free.

FARWELL & RHINES, Props., Watertown, N.Y

FILTER THE WATER.—According to Pasteur and Chamberlain typhoid bacillus is in ninety-nine cases out of a hundred communicated through drinking water.

IMPORTANCE OF SALT—In a recent work by Professor Burggraeve, of Ghent, the prominent theory maintained is that salt is the great regulating agent of life, and on the proper use of which human longevity largely depends. Among the interesting facts recited by Professor B. is that about the end of last century a terrible epidemic, bearing some analogy to scurvy, broke out in Saxony, making such rapid progress among the poorer classes that the government ordered an inquiry into its nature and course. The result was the establishment of a singular fact, viz., that miners, although reduced to the same misery as other workmen, remained with their families completely exempt from the malady. The diet of the miners differed from the others only in one point, viz., that being employed by the state they were supplied with salt gratuitously. Salt was then prescribed as a curative measure, and the epidemic disappeared.

PREHISTORIC SPANIARDS—Recent explorations in Spain by two Belgian scientists have resulted in some very interesting discoveries. Relics of a prehistoric race have been found in great abundance, ranging from the stone age to that of bronze and metals. These people buried their dead not only in stone graves or cells, but also in great jars of burnt clay, accompanied by pieces of pottery and other articles of use and value. This form of jar burial is very widespread, and examples have been found from Japan to Peru. These relics are supposed to belong to that ancient race which lived in Europe previous to the Aryan immigration, the various branches of which are known as Iberians, Pelasgians, Ligurians, &c., according to the country in which they lived. Several skeletons were found adorned with silver and gold ornaments. One of the most remarkable relics is a female skull encircled by a band of silver, to which is attached a thin plate of the same metal.

CALIFORNIA
Fine Table Wines
From our Celebrated Orleans Vineyard.
Groud Rousskky & Co
Producers of the
ECLIPSE
CHAMPAGNE,
530 Washington St.
SAN FRANCISCO.
PARK & TILFORD. New York, } Agents.
C. JEVNE & CO., - - Chicago, }


FACIAL BLEMISHES.
the Largest Establishment in the World for their Treatment. Facial Development, Hair and Scalp, Superfluous Hair, Birth Marks, Moles, Warts, Moth, Freckles, Wrinkles, Red Nose, Acne, Pimples, Bl'k Heads, Scars, Pitting, etc., and their treatment. Send 10c. for book of 50 pages, 4th edition.
Dr. JOHN H. WOODBURY,
37 North Pearl St., Albany, N. Y.
Established 1870. Inventor of Facial Appliances, Springs, etc. Six Parlors.

THURSTON'S
IVORY PEARL TOOTH POWDER
WILL KEEP THE TEETH IN PERFECT CONDITION AND THE GUMS HEALTHY.
Price 25 & 50 Cents PER BOTTLE.

"ROYAL" SALAD DRESSING,
PURE AND WHOLESOME.
Always Fresh, does not turn Oily or Rancid.
"ROYAL" WORCESTERSHIRE SAUCE,
The Peer of American Manufacture.
PURITY. EXCELLENCE.
"CROWN" CELERY SPICES, TOMATO CATSUPS.
Pure Flavoring Extracts, Etc.
HORTON, CATO & CO.,
SOLE PROPRIETORS & MANUFACTURERS,
DETROIT, MICH.

A RICH PRESENT FOR YOU! We have purchased for one-fourth the original actual cost, a large quantity of elegant Papeteries, each one filled with the very choicest quality of Fashionable Linen Note Paper and Envelopes, in beautiful assorted tints, with pens, penholder, sealing wax, etc., to match. The regular retail price of some of these Papeteries is $3.00, others are worth $1.50 to $2.50 each, while the cheapest one has never been sold at less than 50 cents, and a great bargain at that price. They are all very handsome and really valuable. We shall, for the next two months, send one of these Papeteries, carefully packed and fully post-paid, to every one who sends us ONLY ONE DOLLAR to pay for a full year's subscription to DRAKE'S MAGAZINE. The best Papeteries will be sent to those who subscribe first, and it will be "First come best served." All subscriptions will begin with the latest number out. DRAKE'S MAGAZINE is 64 pages and handsomely bound, each number is complete in itself, and has from 15 to 25 handsome illustrations. It has special departments to interest ladies and children, and entertaining matter for everyone. Every article in it is written expressly for it by the best authors. No other magazine of equal value is sold at less than 30 cents per copy, or $2.00 per year, yet we will send you DRAKE'S MAGAZINE a whole year and a BEAUTIFUL PAPETERIE filled with fashionable Stationery, all for One Dollar. A one dollar bill will go safely in the mails. Cut this advertisement out. It may not appear again. Address, DRAKE'S MAGAZINE,
81 Mercantile Exchange, New York City.

MALTED MILK
THE ONLY FOOD
For Infants and Invalids
THAT CONTAINS ALL THE ELEMENTS OF NUTRITION, WITHOUT A SINGLE ADDITION.
MALTED MILK does not have to be cooked.
MALTED MILK needs no addition of milk, only to be stirred up with water, which can be done without the slightest fuss or trouble.
MALTED MILK will not spoil in hot weather.
MALTED MILK is always ready for immediate use night or day, when traveling or at home.
MALTED MILK does away with the danger of using sour or impure milk.
MALTED MILK is free from starch and cane sugar All foods that have to be cooked contain starch.
Ask your physician his opinion of MALTED MILK he knows all about it.
Price, . . . 50 Cts. | Large Size, . $1.00
Extra Large Glass Jars for hospital and family use, ... $3.75
These contain five times the quantity of the $1.00 bottles.
A sample bottle will be sent free to any Mother or Invalid sending their address to
MALTED MILK CO.
RACINE, WISCONSIN, U. S. A.

ON THE USE OF PURGATIVES.

BY CHARLES A. HOFF, M. D., ST. LOUIS, MO.

Of all preparations contained within the *pharmacopœia,* there are none, apparently, held in higher esteem by mankind than that class of medicines, commonly known as purgatives. The busy practitioner confidently prescribes them with variable frequency, singly and combined, from the date of the writing of his very first prescription to that of his last; and the corner druggist rarely sees a day pass over his head on which he does not greet the customer who has called around to get "something to act upon his bowels." Indeed, the inevitable purgative awaits the tiny baby screaming in its first attack of colic; it is resorted to by the invalid weighted down with years of suffering and disease; and it is by no means despised by the individual in robust health, when assailed by the various petty ills, which even the most vigorous seldom entirely escape.

Notwithstanding the fact that purgatives are so generally prescribed by the physician, and so frequently resorted to without advice by the patient, they are not altogether incapable of doing harm. As everybody knows, the habit of purging the system repeatedly with salines, cholagogues, hydragogues, or drastics, is a most pernicious one; and the physician who fails to exercise a proper care, both in the selection and the administration of cathartics will sooner or later bankrupt the health of his patients as well as his own hard earned reputation.

Constipation is a complication of so many disorders, a symptom of so many diseases that its treatment in different cases depends upon very different considerations. For a simple, ordinary attack, the average doctor has been accustomed to use a simple purge, such as castor oil, sulphate of magnesia, rhubarb, senna, aloes, colocynth, blue pills, etc.; yet in none of these, can it be truly said, has there been found all that could be wished for, even in so simple a matter as a laxative. Where can we find the physician who has not been vexed and annoyed at the complaints of his patients against the purgative medicines he has been accustomed to prescribe. Some people there are who can not or will not swallow pills; many object to the nauseating castor oil; not a few oppose the use of salines since they are disagreeable both in taste and effect; many look upon all resinous cathartics as objectionable on account of their so called heating properties; aloes is objected to in pills and especially in pregnancy; elaterium is said to be excessively harsh and severe, croton oil is known to be dangerous; podophyllin causes an undue amount of griping; blue mass is avoided on general principles; and so on to the end of the chapter.

Fortunately, however, the physician of the present need no longer be placed in a dilemma when called upon to prescribe a preparation free from the faults enumerated in connection with ordinary purgatives. The pharmacist has bravely come to his aid with a formula of incomparable excellence; and this preparation, a combination of "manna, purified cathartic acid and fruit juice," although but recently brought to the notice of the medical world, is, nevertheless, already regarded as a most valuable addition to the resources of medicine.

The happy thought that suggested the combination known as the Rio Chemical Co.'s Acid Mannate justly challenges unlimited admiration and esteem, and has thus far evoked from the profession an almost universal verdict of commendation and praise. Prompt, mild and certain in its action, Acid Mannate may well be considered an ideal remedy in the constipation of pregnancy. Being pleasant to the taste, and continuing its good work without increased dosage, it is pre-eminently adapted to cases of habitual constipation. Indeed, in its wide range of adaptability as an aperient medicine it is impossible to exaggerate its importance, or allude either directly or indirectly to the vast variety of its beneficial, therapeutical properties.

The importance of laxatives is probably nowhere appreciated so much as in the constipation of pregnancy; and it is to this fact, no doubt, more than to any other, that Acid Mannate owes its great popularity and fame among remedial agents. The testimony of thousands of honorable medical gentlemen leading us to believe that, through the beneficent effect of this same elegant formula, constipation need not hereafter, as in the past, be regarded as one of the most troublesome attendants upon gestation. Moreover, the atrocious female pill of unknown composition but of dire effect, which has deluged the drug market for ages, we may consider as having had its day; and it is to be hoped that, since the physician is now in possession of a purgative especially suited to the period of gestation, female life will be less frequently harassed by the ails and aches said to be peculiar to the sex; and that miscarriages, displacements, granular erosions, congestions, headaches, dyspeptic and hypochondriacal attacks, and the whole long train of aches, pains and nervous ills will grow less familiar to the medical profession in the same ratio that the physician increases his familiarity with the actions of Acid Mannate.

A full sized bottle of Acid Mannate will be sent free to any Physician who desires to test it, if he will pay the express charges and mention this Journal, on application to the

RIO CHEMICAL CO.,
St. Louis, Mo

J. HENRY HENTZ. J. P. ROBINETT. J. HENRY HENTZ, Jr.

ESTABLISHED 1793.

WHITE, HENTZ & CO.,

SOLE PROPRIETORS OF

Trimble and Pennsylvania Monogram Whiskies.

222 and 224 NORTH SECOND ST., PHILADELPHIA.

D. LIEBER, 17 South William St., New York. Col. H. A. SELIGSON, 1200 Pennsylvania Ave., Washington, D. C.

POLICE DEPARTMENT,

CITY OF NEW YORK.

MESSRS. ADAMS & SONS:

It gives me pleasure to add my testimonial, in behalf of your "TUTTI FRUTTI" CHEWING GUM, to your collection.

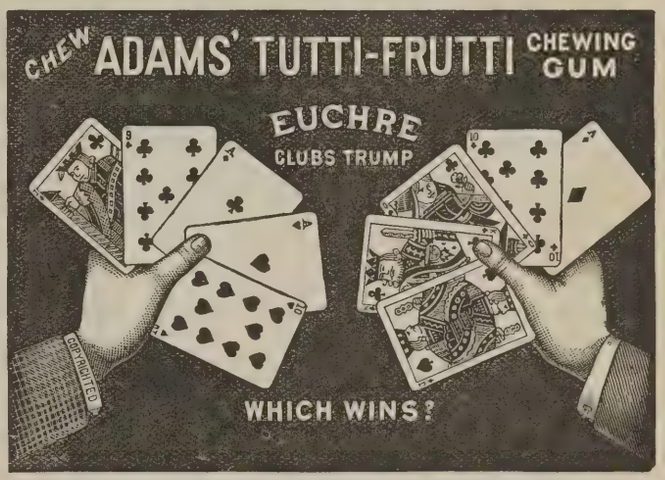
Superintendent Murray and myself were *recommended by Dr. CYRUS EDSON to try your Gum for a form of indigestion* from which we were suffering. At first it seemed to us a ridiculous remedy, but I am happy to say that its effects thoroughly justified the Doctor's recommendation.

I would add that I have rarely taken a more pleasant medicine.

Yours, very truly,

HENRY V. STEERS,

Inspector of Police.



GOLD You can live at home and make more money at work for us than at anything else in the world. Either sex; all ages. Costly outfit FREE. Terms FREE. Address, TRUE & CO., Augusta, Maine.

TO ADVERTISERS!

FOR a check for $20 we will print a ten-line advertisement in One Million issues of leading American Newspapers and complete the work within ten days. This is at the rate of only one-fifth of a cent a line, for 1,000 Circulation! The advertisement will appear in but a single issue of any paper, and consequently will be placed before One Million different newspaper purchasers; or FIVE MILLION READERS, if it is true, as is sometimes stated, that every newspaper is looked at by five persons on an average. Ten lines will accommodate about 75 words. Address with copy of Adv. and check, or send 30 cents for Book of 256 pages.
GEO. P. ROWELL & CO., 10 SPRUCE ST., NEW YORK.

We have just issued a new edition of our Book called "Newspaper Advertising." It has 256 pages, and among its contents may be named the following Lists and Catalogues of Newspapers:—

DAILY NEWSPAPERS IN NEW YORK CITY, with their Advertising Rates.

DAILY NEWSPAPERS IN CITIES HAVING more than 150,000 population, omitting all but the best.

DAILY NEWSPAPERS IN CITIES HAVING more than 20,000 population, omitting all but the best.

A SMALL LIST OF NEWSPAPERS IN which to advertise every section of the country: being a choice selection made up with great care, guided by long experience.

ONE NEWSPAPER IN A STATE. The best one for an advertiser to use if he will use but one.

BARGAINS IN ADVERTISING IN DAILY Newspapers in many principal cities and towns, a List which offers peculiar inducements to some advertisers.

LARGEST CIRCULATIONS. A complete list of all American papers issuing regularly more than 25,000 copies.

THE BEST LIST OF LOCAL NEWSPAPERS, covering every town of over 5,000 population and every important county seat.

SELECT LIST OF LOCAL NEWSPAPERS, in which advertisements are inserted at half price.

5,472 VILLAGE NEWSPAPERS, in which advertisements are inserted for $42.15 a line and appear in the whole lot—one-half of 11 the American Weeklies

ook sent to any address for THIRTY CENTS.

THE FINEST MADE
COLBURN'S
PHILADELPHIA
MUSTARD
KING OF CONDIMENTS

OPIUM AND LIQUOR HABIT CURED.

WE solicit an investigation of our system and methods, and will gladly send to any one very interesting matter on the PIUM HABIT DRUNKENNESS and their effects and cure. Physicians specially invited to examine, and if desirous of trying our remedies, liberal arrangements will be made with them.

THE LESLIE E. KEELEY CO., Dwight, Illinois.

ESTERBROOK'S STEEL PENS

Leading Numbers 14,048,128 130, 135, 333, 161.

ESTERBROOK & Co. FALCON PEN

—For sale by all stationers.—

THE ESTERBROOK STEEL PEN CO., 26 John St., N. Y.
WORKS: CAMDEN, N. J.



These Goods are "Par Excellence,"

Pure, Healthful and Reliable, warranted to give satisfaction in every particular. For sale by wholesale and retail grocers throughout the United States. VOUWIE BROS., Manufacturers, CLEVELAND and CHICAGO.

A BUSINESS BENEFIT.

ADVANTAGES TO ADVERTISERS OFFERED BY THE AMERICAN ANALYST.

It has not the limitations of a daily paper. No one reads yesterday's paper. A monthly lives at least a month, while a semi-monthly is fresh twice a month, and its audience is not limited by geographical lines, but the circulation is all over the United States and Canada.

It contains matters of interest to everyone, especially the ladies of the household, and is, therefore, sure of a careful perusal. Our audiences are intelligent and of the better classes, who have money to spend, and any well worded advertisement in our columns, giving real information, will receive a careful perusal.

Our rates are as low as our circulation affords. Large circulation and original matter cost money, and those advertisers who desire to realize these benefits must expect to pay reasonably for them.

Advertisements in our columns are permanent. Most of our subscribers bind their numbers.

Our advertisements are set up in an attractive form, sure to call the attention of the reader.

Anything that our readers want, or for which a demand is to be created, not wholly of a local nature, will pay to advertise with us.

We take only advertisements from legitimate houses of really meritorious goods, and give them all the editorial assistance they deserve; consequently our readers knowing this, have confidence in advertisements contained in our columns.

The fact that we have the best and largest houses in every branch of trade advertising with us, and that they always renew as their seasons arrive, proves beyond a doubt that they have found the AMERICAN ANALYST a good advertising medium. Why should not you?

PEACOCK'S BROMIDES

(SYR: BROM: COMP: PEACOCK)

NERVE SEDATIVE.

Each fluid drachm represents 15 grains of the Combined C. P. Bromides of Potassium, Sodium, Calcium, Ammonium and Lithium.

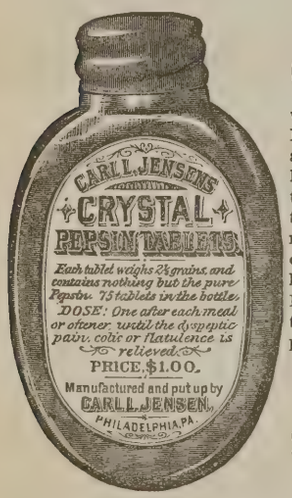
USES:—EPILEPSY, and all CONGESTIVE, CONVULSIVE, and REFLEX NEUROSES.

This preparation has stood the test of time and experience, and can be relied upon to produce results, which can not be obtained from the use of commercial bromide substitutes.

DOSE:—One to two FLUID drachms, in WATER, three or more times a day.

PEACOCK CHEMICAL CO., St. Louis.

CARL L. JENSEN'S CRYSTAL PEPSIN TABLETS



FOR DYSPEPSIA OR INDIGESTION.

CARL L. JENSEN'S CRYSTAL PEPSIN has been known throughout the world for the last ten years among the medical profession only. But a medical preparation of such high value as this could not be kept exclusively within the power of the physicians without permitting the public to become familiar with CARL L. JENSEN'S CRYSTAL PEPSIN, which they have so often seen mentioned in prescriptions from their physicians, and from which preparations they have received such gratifying results. That the public have availed themselves of this knowledge is manifested from the fact that the demand at the drug stores of late for CARL L. JENSEN'S CRYSTAL PEPSIN has become so urgent that we have been repeatedly requested by the Druggists at large to put up the PEPSIN in a more convenient form for their customers who demand JENSEN'S CRYSTAL PEPSIN without bringing a prescription. This PEPSIN, to suit the prescription department, is put up in loose Crystals or Scales, and therefore not in a suitable manner to be handled by the public. It is therefore, for the convenience of the public, prepared in tablet form, of which one or two constitute a dose, and put up in small bottles of convenient form to be carried in the pocket, each bottle containing seventy-five tablets.

CARL L. JENSEN,

SOLE MANUFACTURER,

2039 Green Street, Philadelphia, and 161 West 23d Street, New York.

KEPT BY ALL DRUGGISTS.

ESTABLISHED 1841.



THE GREAT AMERICAN STORY PAPER, —THE— ---YANKEE BLADE---



FREE TO SUBSCRIBERS.

This wonderful family story paper is read every week by 400,000 people. It is a large, eight-page paper, every page filled solid full of interesting reading; stories of thrilling interest, adventure, love, the sea, detective tales, fireside stories, etc. Special articles on the Household Department, Ladies' Work, Boys' and Girls' Departments. The Famous Funny Columns of THE YANKEE BLADE are edited by SAM WALTER FOSS, the celebrated humorist. The circulation is rapidly increasing. Endorsed by the best people as suitable for everybody to read. Its reading matter is pure, and devoid of the slightest tinge of vulgarity. Don't fail to try THE YANKEE BLADE. You will be delighted with it. Comes every week. Our regular subscription price is $2.00 per year. **We offer it to new subscribers for only $1.00 a year, or 50 cents for six months.** We will send it three months for 25 cents. **If you will enclose 6 cts. extra, and mention this paper, we will send you FREE a Half Dozen Japanese Shifu Handkerchiefs** of Mikado paper, fibre silk, nearly half a yard square, in handsome designs, assorted. This is one of the greatest offers ever made by any reliable firm. Send at once. **Sent 2 years for $1.75.** THE YANKEE BLADE is for sale at all newsdealers, for 5c. per copy.



POTTER & POTTER, Pubs. Yankee Blade, Boston, Mass.

We have examined the above-named paper and Japanese handkerchiefs, and find them to be a remarkable bargain. We can recommend them to all our readers.—Editor.

FOR THE ILL-EFFECTS —OF— Summer Heat, Heat Exhaustion.

Where after a prolonged exposure to a heated atmosphere you feel exhausted, depressed and tired mentally as well as physically, take a dessert spoonful of Bromo-Soda in half a glass of water, and drink while effervescing, when relief will be sure to follow.



A Cure for Sick Headache, Sleeplessness, Etc.

ASK FOR BROMO-SODA and TAKE NO SUBSTITUTE.

THE TORSION

Braided Wire Mattress.

At all times a thoroughly ventilated and perfectly clean mattress, it cannot absorb odors, or retain exhalations or disease germs.

D. HAYES AGNEW, M. D., Prof. of Surgery, University of Pennsylvania, says:

"The Torsion Braided Wire Pillow and Mattress I regard as superior to anything of the kind now in use; well suited for either private or hospital use.

Prof. WM. H. PANCOAST, late Professor of Anatomy, etc., in Jefferson Medical College, now Professor of Anatomy and Clinical Surgery in the Medico-Chirurgical College of Philadelphia Hospital Surgeons, says:

"I have used in my surgical practice your Braided Wire, in the form of mattresses, pillows for the head and body, and short pillows for the arm and leg when injured. I find them most admirable, cool and light, yet affording perfect and elastic support.
I have saved a patient from bed sores by the use of the Braided Wire mattress."

WM. H. FORD, President Board of Health, Philadelphia, says:

"I have used the Torsion Braided Wire Mattress with great satisfaction, it is light and therefore easily handled; it is elastic and very comfortable. The case can be easily removed to afford a complete airing, a feature of great importance from a health point of view.
It is an invention of great usefulness.

For descriptive circular and price list, send to

The Torsion Braided Wire Upholstering Company,

1017 CHESTNUT ST., PHILA.

"BILLET"

are

Carefully Selected

French Sardines,

Packed in Choicest Olive Oil.

AT ALL LEADING GROCERS.

Any Retail Druggist in the United States who desires to obtain Advertising Matter, Show Cards, Signs, etc., which will assist and instruct him in the sale of Harriet Hubbard Ayer's Recamier Toilet Preparations and Vita Nuova, should address THE RECAMIER MFG. CO., 52 and 54 Park Place, New York City.

UNEQUALLED Ask your Grocer for, and insist on having, LEA & PERRINS' Sauce, "The Worcestershire." It is known throughout the whole civilized world as the Best and most Delicious Sauce. DELICIOUS.

SCOTCH MARMALADE, Jams, Fruit and Wine, Jellies, &c.
By James Keiller & Son, Dundee.

SCOTCH BISCUITS, Albert, Water, and Oat Cake,
By Robert Middlemass & Son, Edinburgh.

RACAHOUT des Arabes, by De Langrenier, Paris.

BAY WATER, West India, (J. D. S. brand), in cases, one dozen bottles.
Sold by all first-class Grocers.

JOHN DUNCANS' SONS, 43 Park Place, New York. Agents for the United States.

Robert Gordon's
TRADE MARK.

SPICED SEA FOODS
(IN GLASS.)

OYSTERS, LITTLE NECK CLAMS, MUSSELL, SHRIMP, LOBSTER, Etc.,

Packed in 8 and 16 oz. Jars. Guaranteed to be strictly Pure.

MADE OF THE FINEST MATERIALS.

—ALSO,—

ROBERT GORDON'S CONDENSED CLAM CHOWDER,
In 3-lb Cans. Cheapest and Best in the Market.

MANUFACTURED BY

JONES, GORDON COMPANY, Limited,
204 West Street, New York.

A GOOD INCOME.

We have enabled several gentlemen and ladies to add largely to their incomes by paying them liberal commissions on subscriptions.

For further particulars, ADDRESS AMERICAN ANALYST,
19 Park Place, New York

ESTABLISHED 1857.

J. H. CUTTER,

OLD

BOURBON AND RYE WHISKIES.

We are the Sole Owners and Proprietors of this Celebrated Brand of Whiskey.

C.P.MOORMAN & CO. LOUISVILLE, KY.

We Guarantee the Superior Quality and Absolute Purity of every Barrel of Whiskey sold by us under this Brand.

W. P. FESSENDEN, Agent for N. E. States, Maryland and Penn., 11 Central St., Boston.

Good Subscription Agents wanted by AMERICAN ANALYST.

NATRONA BI-CARBONATE OF SODA.

(ABSOLUTELY PURE.)

NATRONA



TRADE MARK

SODA

The nature of the raw material from which NATRONA BI-CARBONATE OF SODA is made—viz., kryolith, a mineral containing *pure sodium*—insures a purity and uniformity of product which cannot be obtained from any other known material. In making BI-CARB. SODA from any other raw material, the use of sulphuric acid is a necessity, but none is used in any part of the process of making NATRONA BI-CARB.; hence its entire freedom from the slightest trace of arsenic, which is always present in ordinary soda. Its absolute purity and entire freedom from all traces of *sulphate of soda*, common salt and other impurities, render NATRONA BI-CARB. NEARLY TASTELESS, and being bolted through the finest bolting-cloth, insures the finest stage of division.

To these indisputable facts the attention of CONSUMERS of soda is specially called. They are IMPORTANT, and should influence both those who use and those who sell soda, to buy and sell NONE BUT THE BEST.

The NATRONA BI-CARB. Soda is kept in stock by almost every wholesale druggist and grocer throughout the United States, of whom it may be ordered.

Natrona Bi-Carb. Soda is unequaled by any other brand of English or American Manufacture.

PENNA. SALT MANUFACTURING CO.,

NATRONA CHEMICAL WORKS. PHILADELPHIA, PA.

THE LABORATORY.

To Inventors, Manufacturers and Applicants for Patents

The AMERICAN ANALYST may be consulted upon all matters involving theoretical or applied chemistry. Advice and opinions given. Analyses and assays made. Patents perfected and secured. Terms reasonable.

Address, AMERICAN ANALYST,
19 Park Place, N. Y.

ALTHENE SKIN SOAP

An absolutely pure and perfect soap for all purposes of the toilet, nursery, bath or sick-room. Has the approval of leading chemists and physicians, and is recommended by all who have used it. Price 25 cts. a cake, or 65 cts. for a box of three. Can be obtained of the retail druggists or from

J. W. CAMPION & CO., 916 Filbert Street,

PHILADELPHIA.



GOLD MEDAL, PARIS, 18[illegible]

BAKER'S

Breakfast Cocoa.

Warranted *absolutely pure Cocoa*, from which the excess of Oil has been removed. It has *three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup*. It is delicious, nourishing, strengthening, easily digested, and admirably adapted for invalids as well as for persons in health.

Sold by Grocers everywhere.

W. BAKER & CO., Dorchester, Mass.

Sura Cura

ROBINSON'S SURE CURE FOR

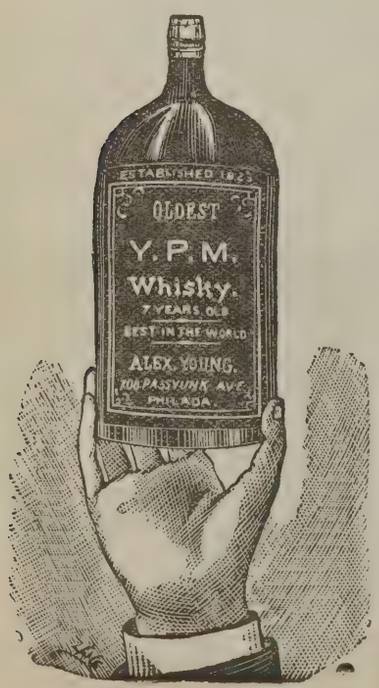
RHEUMATISM

And NEURALGIA,

And remedy for diseases arising from an impure state of the blood. An antidote for MALARIA. Price 50 c. and $1. Sent by mail on receipt of price. Send for Circular.

R. W. ROBINSON & SON,
184 Greenwich Street,
NEW YORK.

Sura Cura



ESTABLISHED 1823.

ALEX. YOUNG CO., Limited

DISTILLERS OF

Y. P. M. WHISKIES

DISTILLERY,

Nos. 408, 410, 412 and 414 South Street,

MALT HOUSE,

416, 418, 420, 422 and 424 South Street,

STORE,

No. 700 Passyunk Avenue.

PHILADELPHIA, PA.

KEITH'S

CON. TINC. AVENA SATIVA

(FROM COMMON OATS.)

WITHOUT ADMIXTURE OF ANY KIND.

A Powerful Nerve Stimulant, Tonic, Etc.,

WAS FIRST offered to the medical profession by B. KEITH & Co., in 1881, as a remedy to be employed in the treatment of

Paralysis, Epilepsy, St. Vitus' Dance, the Morphia or Opium Habit, Chloral and Tobacco Habits, Sleeplessness, Nervous Debility and Exhaustion, Neuralgia, Alcoholism Painful and Deficient Menstruation, Headache, Hysteria, Impotency, Convulsions and Prostration from fainting, and in the Convalescent stage of all Acute Diseases.

DOSE.—From ten to thirty drops, or more, as often as may be indicated to meet the urgency of the case. Administer in hot water when quick action is desired.

AN OVERDOSE CAUSES PAIN AT BASE OF BRAIN.

——) WE MAKE ONE QUALITY ONLY (——

Price,

2 oz., 45c.; 4 oz., 75c.; 8 oz., $1.35; 16 oz., $2.50

B. KEITH & CO.,

73 William Street, N. Y.

GILBERT S. GRAVES

STANDARD

STARCH.

MANUFACTURED WITH ENTIRELY NEW MACHINERY AND BY LATEST IMPROVED PROCESS.

IT IS GUARANTEED to be fully equal to BRANDS SOLD AT FANCY PRICES, and MUCH SUPERIOR TO STARCH SOLD AT EQUAL PRICES.

THE MIRROR GLOSS

Is the finest Starch made for the Laundry, and cannot be excelled. It will not injure the finest Laces.

THE CORN STARCH

For culinary purposes is prepared with the greatest care, from selected Corn, and is a most delicious and wholesome article of food.

ASK YOUR GROCER FOR IT.

SWIFT'S

Choice Chicago Dressed Beef

—AND—

MUTTON.

CAN be found at all times in full supply and at popular prices at the branch houses in all the larger cities and is ***retailed by all first class butchers.***

The trade of all marketmen and meat dealers is solicited for our Wholesale Branch Houses, and the ***public may rest assured*** *that in* ***purchasing our meat*** *from dealers they will* ***always receive the best.***

SWIFT AND COMPANY,

UNION STOCK YARDS,

CHICAGO, ILLS.

Tabasco Pepper Sauce

OR LIQUID PEPPER.

Is simply the Pulp of the Ripe Pepper Extracted by Pressure.

The seed of this Pepper was obtained from Central America, and by careful cultivation in Louisiana for many years has been so improved in strength, flavor and aroma, as to have become a new variety of Red Pepper, superior to all others. The pulp is so handled as to retain all the flavor, strength, aroma and color of the ripe fruit, and to keep unimpaired in any climate. It excites the appetite, promotes digestion, and is pronounced, by connoisseurs, to be the finest condiment in the world. For medicinal purposes it recommends itself by its purity, strength and diffusible form.

Manufactured by E. McILHENNY,

NEW IBERIA, LA.

For Sale by all Wholesale Grocers.

CARNRICK'S SOLUBLE FOOD

IS UNLIKE ANY OTHER INFANT'S FOOD THAT HAS EVER BEEN PRODUCED.

℞

THE FORMULA.

Partially Predigested Milk Solids,	**45 parts.**
Wheat with the Starch converted into Dextrin,	**45 "**
Milk Sugar,	**10 "**

We do not claim this food to be "a **perfect** substitute for human milk." But we do claim that **Carnrick's Food approaches nearer to human milk in constituents and digestibility than any other food that has ever been produced**, and that it is the only infant's food that will, without the addition of cow's milk, thoroughly nurse a child from its birth.

We believe that **Carnrick's Food** solves the problem of a reliable substitute for human milk. The Caseine of cows' milk, by partial predigestion with freshly made Pancreatine, is rendered as easily digestible by the infant as human milk.

We have never published an analysis of **Carnrick's Food** "prepared with milk," for, unlike all other foods, it is prepared by the addition of water only, and we base our claim upon the intrinsic value of the food as compared with an equal amount of solid constituents of human milk. All other analyses or comparisons are misleading. We challenge similar comparisons with any other food, and confidently believe, that if **Carnrick's Food** is depended upon for the nutrition of infants, the great mortality among children will be reduced. Full information regarding the process of manufacture will be cheerfully furnished, and samples sent free to those who wish to test **Carnrick's Food.**

REED & CARNRICK, New York.

GORDON & DILWORTH

MANUFACTURING PURVEYORS

Established 1847

ALIMENTARY PRODUCTS

ALL OF OUR PRODUCTIONS BEAR THIS TRADE MARK

WE WILL PROSECUTE ALL INFRINGEMENTS & IMITATIONS







CHOICE DESSERTS OVER 100 DOMESTIC & FOREIGN FRUITS AND VEGETABLES TRANSMUTED INTO TABLE DELICACIES

PRICES ON PRESERVED FRUITS REDUCED 1ST DEC. 1885

PRESERVED, CANNED & BRANDY FRUITS, FRUIT JELLIES, VEGETABLES, TOMATO CATSUP, SYRUPS & JAMS, SALAD DRESSING, BLACKBERRY BRANDY, MINCE MEAT, PLUM PUDDING, SWEET PICKLES, OLIVES & CAPERS, WINE JELLIES, MARMALADE, SOUPS SAUCES &c

SOLD BY THE LEADING GROCERS ON THE AMERICAN CONTINENT.

GRAND NATIONAL PRIZE OF 16,600 FRANCS.

QUINA-LAROCHE

VINOUS ELIXIR,

A STIMULATING RESTORATIVE

AND

ANTI-FEBRILE TONIC.

This meritorious ELIXIR, QUINA-LAROCHE, is prepared from the three Cinchonas; it is an agreeable and doubtless highly efficacious remedy.—*The Lancet.*

QUINA-LAROCHE, under the form of a vinous Elixir, contains the totality of the numerous principles of the three Cinchona barks. It is a preparation which renders great services to Therapeutics.—Extract of the *Gazette des Hôpitaux*, Paris.

Far superior to all Ordinary Cinchona Wines.

LAROCHE'S QUINA, tried by the Academy of Medicine of Paris, is a specially prepared Compound Extract of Quinquina, a careful analysis, confirmed by experience, has shown that most of the wines and syrups hitherto used have not contained all the properties of this precious bark, of these some, although beneficial, are altogether lost, while many preparations contain but half the properties of the bark in varying proportions.

Mr. Laroche, by his peculiar method, has succeeded in extracting all the active principles of the quinquina, combining these with *Catalan Wine,* forming an Elixir free from the disagreeable bitterness of other similar preparations. Practitioners have found triple advantages in the use of this Elixir; it is a *strong tonic,* is easily administered, and perfectly harmless, being free from the unpleasant effects of Quinine.

THE FERRUGINOUS QUINA-LAROCHE is the invigorating tonic *par excellence,* having the advantage of being easily assimilated by the gastric juice, without, in any way, deranging the action of the digestive organs, proving itself to be a most efficacious remedy in cases of impoverishment of the blood, **Anæmia, Chlorosis, Intestinal Hemorrhage, Castralgia, Exhaustion,** etc., etc.

PARIS.—22 RUE DROUOT.—PARIS.

J. Laroche

E. FOUGERA & CO., New York, Sole Agents for the United States.

ARMOUR & CO.

CHICAGO, ILLS.

PACKERS OF

Pork and Beef Products

CANNED MEATS,

ETC.,

FOR HOME CONSUMPTION AND FOR EXPORT

TO ALL PARTS OF THE WORLD.

Also,

SHIPPERS OF

Choice Dressed Beef,

MUTTON AND HOGS,

In Refrigerator Cars,

To BOSTON,
NEW YORK,
PHILADELPHIA,
BALTIMORE,

And other cities throughout the country.

GREENWAY'S PORTER

—AND—

DOUBLE AND EXTRA DOUBLE STOUT.

GREENWAY'S ALE.
INDIA PALE
IN GLASS OR WOOD
AMERICAN
TRADE MARK.
SEND FOR CIRCULARS.
FULLY EQUAL TO THE BEST IMPORTED.
FOR FAMILY OR CLUB USE.
RECOMMENDED BY OUR BEST PHYSICIANS
FOR SALE BY ALL FIRST CLASS GROCERS AND DEALERS
THE GREENWAY BREWING CO.
SYRACUSE, N.Y.

Greenway Bottling Co.,

BOTTLERS OF

GREENWAY BREWING CO'S BRANDS OF ALE, PORTER, DOUBLE STOUT

—AND—

Germania Brewing Co's Standard Pale Crown Lager & Culmbacher.

N.Y. Depot, 31 Broadway.

ESTABLISHED IN LONDON 1831.



W. G. DEAN & SON,

—MANUFACTURERS OF—

PASTE AND STICK

LICORICE

PURE CALABRIA, Equal to the Imported

Try our SICILY (brand select).

BEST IN THE MARKET.

Also LICORICE TABLETS.

361 & 363 Washington Street,

And 84, 86 & 88 North Moore St.,

W. G. DEAN,
HARRY W. DEAN. } NEW YORK

—THE—

CHRISTIAN MOERLEIN

Brewing Co.,

CINCINNATI, U. S. A.,

Brewers of the far-famed

"NATIONAL" EXPORT

(The Queen of Beers)

LAGER.

Owing to its absolute purity, beautiful pale color, fine aroma and nutritious qualities, the above beer has become the PRIME FAVORITE in all the principal hotels and clubs, and in thousands of families throughout the West and South.

Pure LAGER BEER,

"IMPERIAL" and "CULMBACHER"

Brewed & Bottled SPECIALLY FOR HOTELS, CLUBS AND PRIVATE FAMILIES

BY

Beadleston & Woerz

291 W. 10th St. New York.

Orders by Postal Card promptly attended to.

H. CLAUSEN & SON

BREWING CO'S

CHAMPAGNE LAGER BEER,

ROYAL EXPORT LAGER,

EAST INDIA PALE ALE,

EXTRA AMERICAN STOUT.

Bottled for Family Use and Export by

PHŒNIX BOTTLING CO.

888 and 890 Second Avenue,

Bet. 47th and 48th Streets,

NEW YORK.

Order from your Grocer, or direct from us.

FULL WEIGHT
PURE
DR. PRICE'S
CREAM
BAKING
POWDER
MOST PERFECT MADE

Its superior excellence proven in millions of homes for more than a quarter of a century. It is used by the United States Government. Endorsed by the heads of the Great Universities as the Strongest, Purest, and most Healthful. Dr. Price's Cream Baking Powder does not contain Ammonia, Lime or Alum. Sold only in cans.
PRICE BAKING POWDER CO.
NEW YORK. CHICAGO, ST. LOUIS.

STERLING


BAKING
POWDER
MADE FROM
99 50/100 PURE CREAM TARTAR.
This powder never varies. A marvel of purity, strength and wholesomeness. More economical than the ordinary kinds. SOLD ONLY IN CANS.
STERLING MANU'F'G CO.,
12 & 14 Spruce St., New York.

CLEVELAND'S
SUPERIOR
Baking Powder
Is made only of the purest grape cream of tartar, purest bicarbonate of soda, and a small portion of flour, and is warranted entirely free from alum, ammonia, the phosphates, terra alba, lime, and all the adulterants frequently found in ordinary baking powders. It always affords the most nutritious, the most healthful, and the most delicious food, and the purity of materials used in its manufacture, and the nicety of their combination, render it the strongest and most economical ever produced.
It is recommended for purity, efficiency and healthfulness by various state chemists, chemists of boards of health, and professors in institutions of learning throughout the country.
Sold only in tin cans.
CLEVELAND BROTHERS,
ALBANY, N. Y.

MANUFACTURED BY THE

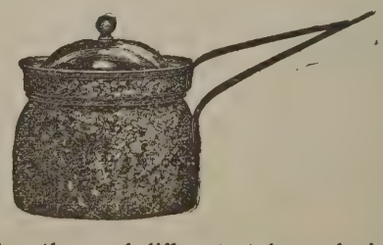

N. K. FAIRBANK & CO'S
FAIRY SOAP.
A PERFECTLY PURE WHITE FLOATING SOAP.
DESIGNED EXPRESSLY TO USE IN TOILET, BATH AND NURSERY.
Admirably adapted to every requirement of the Household.
DAINTY AND DELICATE FOR ALL WASHING PURPOSES
For sale by all First-class Grocers and Druggists.
N. K. FAIRBANK & CO.,
CHICAGO, ST. LOUIS, NEW YORK, OMAHA.

ESTABLISHED 1872.
GELATINE.
JAMES CHALMER'S SON'S
Transparent Gelatine.
PURITY—STRENGTH.
Best for Family Use.
Jellies, Blanc Mange, Etc.
ACKNOWLEDGED BY EVERY ONE EQUAL TO THE BEST.



RUBY ROYAL "SEC."


This wine, of a bright crimson or Ruby color, possesses exceptional merit in all the characteristics of dryness, mellowness of flavor, and delicacy of fragrance. It is the only red champagne in the market, and can be tried at the Hoffman House, Delmonico's and other first-class places.
Sold by the Leading Grocers.

AGATE IRON WARE
Is the Purest, Cleanest, Most Durable, and altogether the Best Ware for family use ever made. It will not rust or break like ordinary Enamels, and is absolutely pure and safe to use, as certified to by the most eminent chemists here and abroad.

Two thousand different styles and sizes of Agate cooking utensils, for family use, are sold by all first-class dealers throughout the world, and giving universal satisfaction.

Subscriptions $1 per year. Now is the time to subscribe.

AMERICAN ANALYST

FOR THE

FAMILY AND CONSUMER.

A SEMI-MONTHLY ADVOCATE OF PURE FOOD AND THE SUPPRESSION OF ADULTERATION.

Office, 19 Park Place.

[Entered at the Post Office at New York, as Second Class Matter.]

AGRICULTURAL EXPERIMENT STATION.
AUG 4 1888
UNIVERSITY OF ILLINOIS.

VOL. IV.—No. 15. NEW YORK, AUGUST 1, 1888. Whole No. 87

CONTENTS.

Adulterated Cheese 317
Army Diet in Japan 315
A Strange Night. Complete Story 313
Book Reviews 317
Cremation 321
Correspondence. Vegetarianism 317
Dinners and Diners 316
Domestic Dietetics 321
Editorial 318
Poisons and their Antidotes—Food Values—Summer Insects—Trust in Man — Country Drinking Water — Interfering with American Commerce—June Exports—What French Wines are Made of.
Fallacy of Plain Living 317
Forks, Introduction of 320
Progress of the Period 320
What Man Does not Know 320
Words in Common Use 320

A STRANGE NIGHT.

We were old friends, Jackson and I, but when we left college and began the grim struggle for pence and praise our paths diverged and we heard little of each other for many years. Since we last met Jackson had struggled into a tolerable practice as a doctor, while I had struggled into no practice at all as a barrister.

One morning I received a note from Jackson asking me to run down and spend twenty-four hours with him, and so we old pals met after long separation.

Jackson labored in a little country town some two hours' journey down the South-Western line. He lived in a house as accentric, and as honest, and as sturdy as he was himself. When I saw the house for the first time, I was possessed with an idea of a builder suddenly gone out of his mind. This well meaning man had selected as the scene of his labors a beautiful grove of pine trees. He chose a clear space, and there built a house, not in the usual way, but according to the dictates of a picturesquely contorted intellect. He built up huge blocks of moss grown stone, with massive beams of timber, and red brick. He launched out into insane wings and abutments, he soared into the heavens on tall skeletonic stacks of chimneys, he grovelled on the ground in terraces and paved courts, and finished up the whole with a roof of ancient red tiles. Altogether it was the most rambling, queer, comfortable house I had ever looked upon.

In this great dwelling, large enough for a garrison, Jackson lived a romantic and solitary life, attended only by a woman from the village who "did" for him during the day, and when night fell retired to her own shed in the village.

When Jackson took the house first, for a mere song, he had a colossal ambition of furnishing it throughout. But his initial failure was so signal that he gave up further attempt in despair and never got beyond the furniture of three rooms—his own bed-room, the dining-room, and his surgery. This he told me as we lingered over the dinner table.

Need I say, we sat laughing, telling stories, recalling old adventures, and passed scenes? Need I say it was prolonged till supper time, and then, when "the woman" had retired to her own wigwam, far into the night?

After dinner, as the early winter shades were gathering, we prowled over the house. Jackson did enthusastic cicerone with a lamp in his hand and a black briar-root in his mouth, while I puffed the ambitious Captain-General and sustained the part of intelligent sight seer.

He even led me into the apartment in which he was to sleep, while I had his bed-room. It was a narrow, crooked place, devoid of everything except dust and a camp bedstead with the usual toilet paraphernalia, and a pile of packing crates skillfully bestowed in a chasm in the wall, which had sprung from the unpremeditated method of building. But there was a superb painting on one wall, out of all proportion to the room, but superb all the same. It was a life-sized portrait of a beautiful woman. The likeness was in this room when Jackson took possession of the house, and although its tenure had been threatened during the days of furnishing, it had outlived the storm, and had now made good its footing as a permanency.

I am not superstitious, at least I was not when I first saw that picture, but had I guessed the influence that it was to work on me before seven hours were passed, I would have torn the coarse, putrid, paint-bedaubed canvas to shreds; I would have hacked its faded frame and worm-eaten stretcher into matchwood.

We stood in the gloomy, shadowy room looking at the imploring face for some time in silence. Then I began laughing and said what came uppermost in my mind.

"It seems rather a strange thing to have to take that picture with the house—a valuable work of art, too. It appears to be the kind of painting that traditions are made of. Is there no story attached to it?

"Well, no," said Jackson, as he laid the heavy bronze lamp on the floor, "none that I know of, except those that I myself have weaved. The truth about it as far as I can make out is that a kind of foreigneering lunatic, who lived in the house a long time ago, imported the picture. This room was his private and particular den; he smoked here, he got drunk here, and now and then stabbed his friends here, and studied, and made bad pictures, and pursued alchemistic research here, and possibly, in the fullness of time, died here; at any rate he achieved that feat in one of the rooms, and his furniture was packed up and carted off to Italy. They would have taken the picture, too, only monsieur effectually prevented it. Do you know, the thing is actually part of the house. It is built into the masonry!"

And with the indifference to personal discomfort characteristic of the historian producing positive testimony, Jackson overwhelmed himself in a shower of dust as he drew aside the heavy drapery that surrounded the picture and revealed a mastive sheet of wrought steel which came out of the wall and gripped the frame in an immovable grasp.

"I can tell you," he continued, as he brushed some of the dust off his shoulder, "I can tell you I don't like the picture. Sometimes I feel positively afraid of it. Yet this night will I have to spend with these two enquiring, hateful eyes watching me through the darkness. However, to oblige a friend, you know! In the meantime let us go downstairs and have supper."

* * * * * *

At about two o'clock in the morning we made a move towards bed. We had arranged that I was to have Jackson's room, and Jackson was to sleep in the unfurnished room as before mentioned. Jackson turned away whistling cheerily to himself.

But I was not going to bed yet. I had a great deal to do first. I had to wheel a soft, graceful sofa in front of the fire and surround it by a wide-spreading screen, so that I had every particle of warmth and light to myself. Then I had to open a portmanteau and take therefrom an old and well-worn shooting jacket and some papers which had to be arranged before I slept. Then I threw myself on the lounge and prepared for a good, solid hour's work.

Thus far, and no further, had I got with my arrangements, when I heard a door in the passage banged with hideous uproar, and a sickly thrill at my heart told me something awful was about to happen. Someone came along the passage with the uncertain shuffling step of a drunken man, and my door was shaken as if by someone trying to find the handle, and then Jackson burst into the room. He advanced into the light of the shaded lamp, but so changed that at the first glance I did not recognize him. The face that but a few minutes ago was flushed and smiling was now rigid and set; the complexion wore a ghastly blue tinge, and every particle of color had died on his cheeks. His eyes were dilated, and his short curly hair was absolutely erect. He stood staring at me with one hand raised and his mouth open, and gasping as though struggling to speak. To be shut in a lonely house at dead waste and middle of the night with such a figure would be sufficient to try a strong man's nerves, but I (strange to say) was perfectly self-possessed.

I held in my hand a wretched weather-beaten old brief, which had been fingered by generations of lawyers, of a case that had been tried at various prehistoric courts, and confirmed and rescinded by judges known to history. Then it was replaced in its original tin box to wait for the period when I, gaily bedight of wig and gown, should go forth to do battle on behalf of the promising young heir who had died of old age before I was half finished at Oxford. However, this bit of annotated parchment was a stout link, which was sufficient to bind me to the practical commonplaces of life, just at first.

"What on earth's the matter with you?" I asked, laughing. "Have you swallowed the bedroom poker?"

Jackson did not notice my mockery, but remained gasping. Power of speech returned after a while, and

LACTOPEPTINE,

The most important remedial agent ever presented to the Profession for Dyspepsia, Vomiting in Pregnancy, Cholera Infantum, Constipation, and all Diseases arising from imperfect nutrition.

Lactopeptine precisely represents in composition the natural digestive juices of the Stomach, Pancreas and Salivary Glands, and will, therefore, readily dissolve all foods necessary to the recuperation of the human organism.

CAUTION

We regret that we are compelled to caution the profession in prescribing Lactopeptine, but very careful investigation has proven to us clearly the necessity of it. Substitution of cheap and worthless compounds are being made in many cases where Lactopeptine is prescribed.

Lactopeptine is always UNIFORM, and its effects are SPECIFIC, and no one has ever been able to imitate its digestive value. If you do not obtain positive results when you prescribe Lactopeptine, you can be sure that some substitution has been made, and in such cases it may be necessary for the physician to prescribe Lactopeptine in the original ounce package to insure certainty of obtaining the genuine article. We can confidently make this assertion, knowing the scrupulous uniformity in digestive value of every ounce of Lactopeptine.

Lactopeptine has always been kept strictly in the hands of the Medical Profession, never having been admitted in any publications but Medical Journals. It is prescribed by the most intelligent and educated physicians in all parts of the world, and there are but few physicians who have ever used Lactopeptine that will not agree with the late Prof. L. P. Yandell, when he says: "Lactopeptine is one of the certainties in medicine, and in this respect ranks with Quinine."

In the various forms of Dyspepsia, in vomiting in Pregnancy, and in Mal-nutrition of children, there is no known remedy so positive in results.

P. O. Box 1574. THE NEW YORK PHARMACAL ASSOCIATION, NEW YORK.

I managed to make out through his gasps and sobs a low murmur: "Oh, God, I've seen it—I've seen her—the picture in my room. The light went out, I locked the door, she's there now!"

I confess I was really frightened, but my pride would not allow me to show it. I assumed a reckless, swaggering air which I solemnly believe was the only thing that prevented us both going mad with terror that terrible night.

"Oh, there is a lady in the case," I said, standing and leading my friend to the fire. "Has the portrait jumped out of its frame and begun walking about to stretch its limbs?"

Jackson shuddered and nodded his head. I was trembling with mortal terror, but, poor fool that I was, I must needs play the part of a thorough-going fire-eater, who feared neither man nor devil.

"I will go and interview her," I said. "I will point out to the young lady the impropriety of presuming on her privileges in the house of a bacheldor—she ought to stop in her proper place."

I took the matches from the table, and asked Jackson if he would come with me. He clutched me by the coat and murmured, "For the love of Heaven don't go near that accursed room!"

I shook him off roughly and said with rudeness, only pardonable by my fright, "Hang it man, leave me alone. You'll make me as frightened as you are yourself if you go on with this foolery."

He threw himself into a chair, and took hold of the lamp as much as to say he would not go himself, nor allow the only light in the house to depart from him.

"Very good," I said, with a poor assumption of gaiety. "I go to lay this ghost for you, alone and armed with nothing more potent than a box of patent matches warranted to strike only on the box!" But my heart was in my mouth all the same.

The passage was pitch dark, but I felt my way along it until I came to Jackson's bedroom. Then I struck a light, paused until it was fairly alight, then unlocked the door and swung it wide open. A hot putrid breath of air wafted past me as I entered, and when I got to the middle of the room my light went out.

A whirl of mortal terror seized me, and I almost shrieked with fear, but I braced myself and stood still for a moment, and out of bravado waved the glowing charred wood in the air.

Within the red glare of the carbonized wood, within hand-reach of my shoulder, framed in the surrounding darkness, was a pale, pale face, and a pair of brilliant eyes looking straight into mine. I tell you the glint of those terrible piercing eyes was more than mortal man

MELLIN'S

TRADE MARK

ORA ET LABORA

FOR INFANTS & INVALIDS

FOOD

The Only Perfect Substitute for Mother's Milk.

A Copy of our Book,

The Care and Feeding of Infants

will be MAILED FREE to any address.

DOLIBER, GOODALE & CO.,

40-41-42-43 Central Wharf, Boston, Mass.

STEVENSVILLE MILLS.

IMPEROYAL VACUUM COOKED **OATS.**

IMPEROYAL VACUUM COOKED **WHEAT.**

M. D. STEVENS'

SOLE MANUFACTURER OF

ABSOLUTE PURITY.

M. D. STEVENS IMPEROYAL WHEAT & BUCKWHEAT FLOUR REGISTERED TRADE MARK

HOUSEHOLD NECESSITY.

ONE MINUTE IN PREPATATION.

IMPEROYAL VACUUM COOKED **HOMINY.**

IMPEROYAL GRIDDLE CAKE **FLOUR.**

Recommended by Eminent Physicians and Chemists.

☞ Adapted to all kinds of Pastry, Bread, Biscuit, Griddle Cakes, etc., and its absolute purity and freedom from Alum, Terra Alba or any injurious ingredient, makes it a necessity in every household. No lady can afford to be without it. Sold by best Grocers.

M. D. STEVENS,

Room 18, Mercantile Exchange,

Cor. Hudson & Harrison Sts., NEW YORK.

THE DIPLOMA OF HONOR.

NESTLÉ'S FOOD IS

The only infant's food that has ever received 12 Diplomas of Honor.

The only *sound, safe, nutritious* food that is prepared with water alone.

The best safeguard against Summer Complaint and Cholera Infantum.

"The best of all foods for Infants."

See Ringer's Hand-Book of Therapeutics, 11th ed.

Send for Sample to THOS. LEEMING & CO., New York.

F. W. DEVOE & CO.,

ESTABLISHED 1852.

PURE MIXED PAINTS

WE desire to call attention of consumers to the fact that we guarantee our ready-mixed paints to be made only of pure linseed oil and the most permanent pigments. They are not "Chemical," "Rubber," "Patent," or "Fireproof." We use no secret or patent method in manufacturing them by which benzine and water are made to serve the purpose of pure linseed oil. Sample cards containing 50 desirable shades, sent on application.

Catalogues of our different departments to responsible parties.

FINE VARNISHES, WOOD FILLERS, WOOD STAINS.

Artist's Materials. Mathematical Instruments.

Cor. Fulton and William Sts., New York.

COFFIN, DEVOE & CO.,

179 RANDOLPH STREET, CHICAGO.

IMPORTANT

TO THE

MEDICAL PROFESSION.

Send your address to THE NEW YORK PHARMACEUTICAL COMPANY, BEDFORD SPRINGS, MASS., for Illustrative Hand-book, **FREE**, containing valuable formula, special directions, and the testimonials of one thousand physicians in favor of the great merits of

HAYDEN'S

Viburnum Compound,

IN FEMALE DISEASES.

Also, the

URIC SOLVENT,

For KIDNEY DISEASES, and complaints arising therefrom.

NO LOOSE BRISTLES!

NO BLEEDING GUMS!

PERFECTLY POLISHED TEETH!



Three Prominent New Orleans Dentists voice the opinion of their profession after thorough tests.

NEW ORLEANS, June 11th, 1888.

After satisfactory trial, I can safely say that the polish obtained from the Felt is superior to that which is obtained from the bristles. JAS. WEST, D.D.S.

I consider your brush an improvement on the old tooth brush. R. J. FRIEDERICHS.

I can cheerfully recommend it as being superior to any other in the market. I intend to recommend it to all my patrons. Respectfully, G. P. MALONEY, D.D.S.

First cost, **60 cents**, for holder and box of 18 Felt Polishers, latter need only be renewed, 25 cents per box; holder imperishable; at all dealers or mailed by HORSEY M'F'G CO., Utica, N. Y.

could bear. With a cry of agony I turned and dashed out of the room and along the passage, conscious of nothing but a mad desire to be in the light again, and beside a human being.

Jackson was still sitting pale and stricken. He looked at me when I entered, and with his tight-drawn rigid lips formed the words, "You've seen it?"

"I've seen it," I shuddered, "and I will not remain in this accursed house one moment longer. It may follow us here and then I shall go mad."

"You're right," he murmured, "we must not stop here—let us go." He took my hand, and together we crept stealthily down the stairs, and only pausing to take our hats and ulsters, let ourselves out of the front door.

It was a clear, frosty night, the moon shone down coldly, and the clouds were scudding before the stars. The wind blew on our fevered frames, and we shivered.

The sudden transition from the over-heated house with its maddening terror to the serene winter night made a strange impression on me. I cannot describe the sensation. But I can *feel* it. We traversed the little garden walk in silence. When we got to the gate Jackson paused, and turning round, spoke: "There is the window," he said, with a slight tremble in his voice, "there is the window of that horrible room; it looks harmless enough, yet I wonder, in the name of mercy, what devil's tricks are going forward at this moment."

Our walk had brought us to the left corner of the house, and the window was just about 8 feet over our heads. As he spoke the window was illuminated by a strange bluish light. It lit up the room in a vague hazy way. Nothing was invisible, yet nothing was perfectly distinct, and in the middle of the room there was a black, motionless outline of a woman. We stood in silence for perhaps five minutes, then the light gradually died away, and nothing was left but the dark framework of the window.

I motioned mutely to Jackson to come away, but he stood his ground firmly. I looked at him in the moonlight, and was surprised at the change that had come over him. He had entirely recovered his manhood. The color had returned to his cheek, and his face wore the old, easy-going, calm expression. He smiled upon me, and said quietly, "Dick, old boy, I've been a fool, a madman, a coward; but I'm all right now. I shall not run away from the old house. Not all the ghosts, and pictures, and dark rooms in the world would frighten me now. You can come with me if you like, I'm going back to probe the matter to the bottom!"

And I went with him. We probed the matter to the bottom, but we discovered very little. Armed with the lamp, we re-entered the mysterious room, but all was as undisturbed as on the first occasion when we visited it. The melancholy-eyed lady looked down on us as sadly, and the walls seemed as blank, and the curtains and fixtures were as dusty as ever, but we found no explanation of the horrible figure we had seen.

We spent the night by the fire in arm-chairs, and next morning I returned to London.

Here my story ends. I don't expect anyone to believe it. According to Mrs. Sidgwick and others there are no such things as ghosts and haunted rooms in real life. All the same Jackson never spent another night under that roof. The house has been let five times within five years, and the tenants have never remained in possession more than seven days at longest, and in one instance a man has been found dead in his bed in that room. He died from natural causes, of course. It would be absurd to say that sights and shadows had arisen before the suddenly awakened man which froze the life out of him in one awful shuddering sigh of mortal terror.

ARMY DIET IN ASIA.

BILL OF FARE OF THE JAPANESE SOLDIER.

On his entrance into the army the soldier receives a manual of hygiene in which Ogata has given, in a familiar form, very important counsel. The alimentation of the Jaapanese soldier is composed of a daily ration of 1,091 grammes of uncooked rice and a money allowance—with which to purchase food—of six cents a day for privates and eight cents a day for officers. With this sum they buy fresh or salted fish; tofou, a pulp of fermented beans, very rich in albumen; daiko or turnip cabbage, onions, radishes, gherkins, batatas, and aquatic plants. They also buy shrimps or lobsters, seeds and stems of nenuphar (*nymphea nelumbo*); preserved ginger, fried or boiled Indian meal, dried mushrooms, preserved red beans, salted plums, fermented cucumbers, etc. To these a small amount of pastry is added, together with allspice, pepper, saffron and fermented sauces, which are used to mask the insipid taste of the rice. The most used of these sauces is shoyou, a fermented product of beans. Rice, which is simply boiled, takes the place of bread. Tea is the only drink except among those who can afford saki or rice brandy.

The Standard of Excellence.

KINGSFORD'S

OSWEGO

Pure and Silver Gloss



STARCH

KINGSFORD'S

OSWEGO CORN STARCH

FOR

Puddings, Custards, Blanc-Mange, Etc.

THE PERFECTION OF QUALITY.

WILL PLEASE YOU EVERY TIME.

Always ask your Grocer for these goods.

COLDEN'S LIQUID BEEF TONIC.

ORIGINAL LABEL:
"Colden's Liebig's Liquid Extract of Beef and Tonic Invigorator."

AN INVALUABLE AID IN THE TREATMENT OF ALL CASES OF DEBILITY.

Established 15 Years. Endorsed by Scores of Physicians. Essentially Different from all other Beef Tonics. Beware of Imitations.

COLDEN'S LIQUID BEEF TONIC consists of the Extract of Beef (by Baron Liebig's process), spirit rendered non-injurious to the most delicate stomach by extraction of Fusel Oil, soluble Citrate of Iron, Cinchona, Gentian and simple aromatics. An official analysis of this preparation by the eminent chemist ARTHUR HILL HASSALL, M. D., F. R. S., and an endorsement by SIR ERASMUS WILSON, F. R. S., is printed on the label of each bottle.

Its Range of Action Embraces all Cases of Debility.

By the urgent request of several eminent members of the medical profession, I have added to each wineglassful of this preparation two grains of SOLUBLE CITRATE OF IRON, and which is designated on the label as "No. 1," while the same preparation, without Iron, is designated on the label as "No 2."

It acts directly on the sentient gastric nerves, stimulating the follicles to secretion and gives to weakened individuals that first pre-requisite to an improvement, an appetite.

☞ *I will, upon application, send a sample bottle of* ***Colden's Liquid Beef Tonic*** *to any physician in regular standing. Please ask your Dispensing Druggist (if he has not already a supply) to order it. In prescribing this preparation physicians should be particular to mention "COLDEN'S" viz: "EXT. CARNIS. FL. COMP. (COLDEN). It is put up in pint bottles and can be had of Wholesale and Retail Druggists generally throughout the United States.*

C. N. CRITTENTON, Sole Agent,

115 Fulton Street, N. Y.

Please Mention the AMERICAN ANALYST.

DINNERS AND DINERS.

MODERN PROGRESS IN THE SCIENCE OF GOOD LIVING.

America, since she imported cooks, now rivals the world in the science of dinner giving. The fine napery of Berlin and Italy, the glass of Bohemia, the gold and silver work of Russia, the choicest services of Faience porcelain and china from England, and the delicate fancies of France, the general tastefulness in floral decorations (although these are apt to be overdone) find expression at an American dinner.

The following appeared in the *Newcastle Chronicle*, 6th January, 1770: "Monday last was brought from Howick to Berwick, to be shipp'd for London, for Sir Henry Grey, Bart., a pie, the contents whereof are as follows: viz., 2 bushels of flour, 20 lbs. of butter, 4 geese, 2 turkies, 2 rabbits, 4 wild ducks, 2 woodcocks, 6 snipes and 4 partridges; 2 neats' tongues, 2 curlews, 7 blackbirds and 6 pigeons. It was made by Mrs. Dorothy Patterson, housekeeper at Howick, and was near nine feet in circumference at bottom, weighs about twelve stones, will take two men to present it to table. It is neatly filled with a case and four small wheels to facilitate its use to every guest that inclines to take of it at table." How the combinations of the contents would assimilate in an epicurean point of view, is rather more than we care to enter into.

Some of the new London temperance coffee taverns are got up to represent gin palaces, with all the adventitious attractions of mirrors, metal and marble. A well soaked old toper mistook one of these the other evening, and floundering in, handed a small pocket flask across the counter and demanded "a quartern of the best." The bottle was filled and returned, and the barman refused to accept payment for it, remarking that he should like to get him for a customer. The old sinner chuckled as he went out, but when he came to sample the contents he found it was water, and in spite of all his abuse, the barman maintained to the last that that *was* "the best."

London tradesmen have adopted a novel method of doing business. They undertake to supply a household during the season with certain articles of food at so much a head. A supply of fish, for example, can be had during the season at a charge of sixpence a day per head, the customer having the choice of ten varieties of fish. Once the order is given the householder has no more trouble—the fishmonger sending a regular daily supply, the selection being generally left to him. The plan is said to work better than might be expected. If a customer is dissatisfied, he can change his tradesman; and there is this advantage, that the consumer can estimate to a sixpence what his expenditure will be for any given time. The principle might be adopted to advantage here.

Only two meals a day are served at Cuban hotels. They live much as people do in some parts of France or Switzerland. You take an orange or two with a cup of coffee and a roll in the early morning; a liberal breakast, in courses, is served at eleven o'clock, and a ceremonious dinner at four or five in the afternoon. This mode of living is admirably suited to the climate, and you fall in with the custom and like it at once. The breakfast opens with small olives and fresh radishes served in the same dish; the next course is fish, then eggs, meat, etc. You are not asked what you prefer, but each course is set before you and you partake of it or not. Instead of beginning with fruit, the Cuban breakfast ends with it—pineapples cut from the stalk the same morning, bananas freshly picked, sapodillas, a a faint and rather over-sweet morsel, with oranges *ad ibitum*. In Florida and many other parts of the country, the orange is cut in halves and its juice and pulp are passed to the mouth with a teaspoon. In Havana the orange is served whole on the table, peeled down to the juicy "meat" of the fruit, and you present the golden ball to your lips on the prongs of a fork. At every American hotel the moment you sit down the question is almost flung at you, "Tea or coffee?' Cubans better understand what is healthful. They follow Nature's plan, and take their meals more as the lower animals do. Cubans do not fill their stomachs with fluids during meals. After breakfast is over then tea or coffee is served.

The *Daily Telegraph* has been discussing the possibility of inducing mankind to eat whale. Somebody, greatly daring, has dined on whale's flesh, and reports it good. One average whale would yield 50,000 pints of soup—somewhat oily, perhaps, but nutritious and heat-producing; good enough, at any rate, for charity dinners to the poor. "An entire child's school," says the editor, "might be fed out of a single whale for the whole winter." That would depend, probably, on the size of the childs' school and the size of the whale. It may be admitted, however, that what Mark Twain calls a good, ordinary, moderate-sized whale would comprise a great deal of solid eating; it may also be presumed that a little of it would go a long ways. Moreover, the cetaceans are a long-lived race; the *Telegraph* have heard of specimens from three hundred to seven hundred years old. There is a strong antecedent probability that even a middle-aged whale—say, rising his third century—would be tough. All things considered, therefore, the calculation is not unreasonable that one whale would last a boarding-school a whole winter. The editor supposes that this would mean a great saving to the boarding-school keeper. That depends on the price of the whale. Is it expected that whale meat will be cheaper than mutton?

Mr. Washburne gives some curious facts and figures as to the advance of the prices of provisions during the siege of Paris. He notes in the middle of November: "These people would endure wonders could you convince them there was anything to be gained. They are getting down to what we called in the Galena Lead Mines, 'hard pan.'" Butter cost £1 per lb.; chickens were at 30s. But bread was still cheap and wine abundant, as it always was. A few days later the quotations for cats, dogs and rats were—"a common cat, eight francs; a Thomas (!) cat, ten francs; a common rat, two francs; long-tailed rat, two francs and a half; for dogs, a cur of low degree, two francs a pound," etc. On Christmas Day a moderate-sized goose was selling at £5 and a chicken at £1 15s. Nevertheless, what with chicken, canned meat and fruits he managed to give a fine dinner of ten covers at the Legation.

The area and capacity of the Hotel del Coronado, of San Diego, which is said to be the largest hotel in the world, are:—Area of grounds, twenty acres; area covered by building, five acres; total floor area, four and a half acres; capacity of reservoirs, 150,000 gallons; area of dining rooms, 10,000 square feet.

BURNETT'S
PERFECTLY PURE HIGHLY CONCENTRATED
Standard Flavoring
EXTRACTS

THE superiority of these Extracts consists in their
PERFECT PURITY AND GREAT STRENGTH.

There is no subject which should more engross attention than the purity of the preparations which are used in flavoring the various compounds prepared for the human stomach.

They are not only true to their names, but are prepared from fruits of the best quality, and so highly concentrated that a small quantity only need be used.

JOSEPH BURNETT & CO., Boston, Mass.



ALTHEA.

The greatest hygienic face stimulant. Is the grandest preparation for the complexion ever discovered.

PRICE, $1.00 PER BOTTLE.

MANUFACTURED BY THE

ALTHEA COMPANY

25 West 125th St., N. Y.

Ask your druggist for it, or send direct to us.

"ROYAL POLISH"



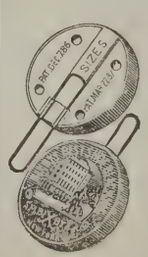
The Most Reliable Dressing
FOR
Ladies' and Children's Shoes.

It is the BLACKEST.
It COATS the Leather the LEAST.
Does NOT INJURE the Finest Kid.

There is nothing AT ANY PRICE equal in quality, or so convenient and CLEANLY TO USE.

SOLD EVERYWHERE.

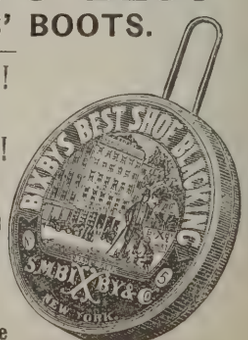
Ask Dealers for "BIXBY'S ROYAL POLISH."



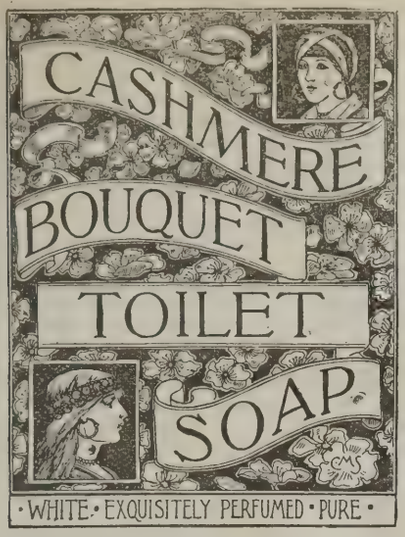
"BIXBY'S BEST"
For GENTS' BOOTS.

Shines Quickly!
Saves Labor and
Leather!!

—TRY—
"Size 5" OR
"Size B"
WITH
Pat. Sliding Handle



THE MOST PERFFECT EVER INVENTED.
Working under the box, ready for use when wanted



CORRESPONDENCE.

VEGETARIANISM.

MANCHESTER, ENGLAND, *July* 9, 1888.

Editors AMERICAN ANALYST:

In your issue of the 1st ulto. you refer to the establishment of the "Charing Cross Vegetarian Hotel and Restaurant," London, which many persons speak of in terms of commendation. The fact that such an undertaking has been started is strong evidence of the growing acceptance of the principles of vegetarianism, as being both practical and advantageous, to those engaged in busy town life. Certainly those who judiciously adopt the system generally find the latter characteristic fully borne out in their own experience. Some of your readers, perhaps, would like to share in the benefits of the system, or, at least to become better acquainted with it. To any such I will be happy to send a few papers on receipt of request.

Yours respectfully,
JOSEPH KNIGHT,
Secretary of the Vegetarian Society, 75 Princess St., Manchester, England.

ADULTERATED CHEESE.

FALLING OFF IN THE EXPORTS OF THE ARTICLE TO GREAT BRITAIN.

A report on the adulteration of American cheese has been issued from the Agricultural Department of the Privy Council Office, based on reports from consular officers in the United States. From these it appears that the practice of adulteration is not so prevalent as has been supposed, and several of the State Legislatures have passed stringent laws against it. New York State is the foremost in the industry, the quantity made there in 1885, for instance, exceeded the cheese product of all the other States of the country by 14,000,000 lbs. Some years since there was some adulteration there, but, severe penalties having been imposed by a law passed on April 30, 1885, these frauds ceased, and, it is added, there is no reason to suppose that any adulteration whatever is now practised. In Pennsylvania also a stringent law against the adulteration of cheese has been passed, and it does not appear that any animal fat is used there in the cheese manufacture, though in this State and in New York there are two factories where an inferior butter called "butter cheese" is produced, but it is not exported. The adulteration of cheese with animal fats and vegetable oils is, however, practised in the States of Illinois and Wisconsin, deodorized lard or cottonseed oil being substituted for the cream. Public opinion in New York is said to be strongly opposed to the malpractices complained of, and at the meeting of the New York Produce Exchange held last year the manufacture of large quantities of adulterated cheese "in certain portions of the Western States," almost exclusively for export to Great Britain, was condemned as tending to create prejudice in the markets of the world against American products; and again this year the same Exchange has passed a series of resolutions urging upon the United States Congress the extreme importance of passing a law making it a misdemeanor to offer for sale in all territory subject to national jurisdiction any article of food that is injuriously adulterated, and to compel the honest sale of all articles of food. The Exchange also requested the co-operation of all the Exchanges in the United States, as well as in foreign countries, in supporting measures tending to the suppression of injurious adulterations except under their true name. The Dairymen's Associatiation of New York State has taken similar action. From Baltimore it is reported that little cheese is made in Maryland and Virginia, and considerable quantities are imported from the North-Western States to supply the deficiency. Complaints as to the difficulty of obtaining a genuine article are said to be loud and general, and the demand for cheese is falling off in consequence in that region. In conclusion, it is pointed out that the adulteration in certain regions have apparently injured the American cheese export trade considerably. The exports to Great Britain have fallen off very much latterly. There has been a gradual dimunition since 1878, in which year 1,345,745 cwts., valued at £3,306,612, were sent to this country. In 1882 only 969,502 cwts. were exported, valued at £2,711,259. In 1885 the amount had been reduced to 844,205 cwts., of the value of £1,865,164; and in 1887 only 759,463 cwts., valued at £1,847,412, were sent over. That this falling off is due to the depreciation in the quality of the cheese on account of its adulteration seems to be indicated by the action of the New York Produce Exchange and the New York Dairymen's Association in deprecating the dishonest dealings of cheese manufacturers in the North-Western and other States, and asking for the intervention of Congress to pass a national anti-adulteration law.—*London Grocer.*

THE FALLACY OF "PLAIN LIVING."

Good plain living is still spoken of by old-fashioned middle-class people as if it consisted of little more than a joint of beef or mutton roasted or boiled, and as if cookery-books were consequently altogether mistakes; but better-informed people know this is not the case. The prejudice in favor of a joint of meat with a simply made pie or pudding and certain vegetables is, in fact, a fruitful source of indigestion, under the influence of which life loses its enjoyment and health suffers. Without undertaking anything costly or elaborate, a variety of admirable dishes may be placed upon the table. Yet, to quote a sound authority, how often do we see, "partly upon the erroneous supposition that plain roast or boiled is the most wholesome species of food, and partly to avoid the trouble of providing anything else, a whole family, however various their constitutions may be, seated at table before a single joint, to take their chances of suffering from the repletion which even a small portion may occasion to a delicate person, who could have partaken of three or four judiciously cooked dishes without sustaining the slightest inconvenience. The stomach, in fact, never performs its duties so effectually as when it acts upon food composed of much variety." Indeed, the united testimony of high medical authority proves that a variety of well-dressed food is more easy of digestion than a meal confined to one sort of solid meat. As Dr. Herbert Mayo says, "*Diet should be varied.*" And he adds, "A spoonful of soup, a flake of fish, a slice of cold beef, in succession, will often provoke an appetite, and with it digestion, where the nicest cutlet, or the most tempting slice of haunch of venison, would have gone against the stomach.—*English and French Cookery.*

REVIEWS OF NEW BOOKS.

THE SCIENCE OF THOUGHT. Three Introductory Lectures delivered at the Royal Institution, London, by F. Max Müller. Chicago: The Open Court Publishing Co. 1888.

This book contains three essays: 1, The Simplicity of Language; 2, The Identity of Language and Thought; 3, The Simplicity of Thought. They were originally presented by their learned author as lectures delivered in 1887, appearing for the first time in print in the pages of *The Open Court* a few months later. An appendix contains Max Müller's correspondence on "Thought Without Words" with Mr. George Romanes, the Duke of Argyle, etc. Max Müller's essays must not only be read—they must be studied; and we should be very grateful that the eminent philologist uses such simple language. In spite of all the simplicity of Max Müller's style, it takes much careful study to fathom the depths of his thoughts. The study of language is of interest to the lawyer as well as the clergyman, the scientist as well as the teacher, and no education is complete without it.

MERCK'S BULLETIN. A Periodical Record of New Discoveries, Introductions or Applications of Medicinal Chemicals, No. 3, June. Darmstedt and New York.

A very valuable record of all new discoveries in that branch of chemistry relating to the sciences of medicine and pharmacy is furnished by *Merck's Bulletin*, the June number of which has been recently received. It would be difficult at the first glance to conceive that such a publication had much chance of attracting any special attention, covered as the field which it embraces already is with more or less complete and reliable periodical literature, but all doubts will disappear when it becomes known that in its case the publishers do not offer us a trade organ or advertising medium, but an enlightened and unprejudiced synopsis of the results obtained by eminent physicians, surgeons, chemists and pharmacists in the pursuit of their professional studies all over the world. Its notices being brief, but practical and to the point, we are enabled to glance over its pages with a rapidity unimpeded by attractive illustrations, advertisements or editorial feasts of reason and flows of soul; and this, in addition to its other qualities, is an advantage that no busy man will despise. Of the fifty-three items dealt with in the issue before us, there are two or three which will be read with special interest. One of these is the preparation of ethyl bromide by a new method, which, being free from the inconveniences incident to the phosphorus-alcohol-bromide process, and relying upon the reaction between ethyle, sulphuric acid and potassium bromide, results in a product which may be used with perfect impunity in cases of short anesthesia with none of the dangers or risks allied to chloroform. With regard to saccharin, the *Bulletin* makes what, in our opinion, are seriously premature and adventurous statements. It is true that the reliable observations which have been so far recorded upon the action of this product of coal tar have been insufficient to warrant an absolute condemnation of its use, but we are inclined to disbelieve that it is either inert or non-toxical, especially since it has a slightly acid reaction and is capable of forming salts with the alkaloids. What proof have we beyond hypothesis and deduction that saccharin passes into the urine unchanged? If it have the power of retarding the decomposition of what the *Bulletin* is pleased to call the "ammonical fermentation" of urine, must it not consistently be assumed that it will act as an antiseptic in the stomach, and retard or prevent the decomposition or fermentation of the food? This, however, is not the place for a discussion of this important and interesting subject. While life remains men will always differ and "doctors disagree," and we therefore have no *arriere pensée* when we wish to *Merck's Bulletin* that success and prosperity which it deserves.

American Analyst,

Published on the 1st and 15th of each month.

Subscription, - - - - - - $1 per year.
Single Copies, - - - - - - 5 cents.
Subscriptions to foreign countries, - $1.50.

Remit by Express Money Order, Draft, P. O. Order, or Registered Letter.

Advertising rates on application.

EUROPEAN AGENCIES.

On file at "American Exchange," 449 Strand, London; and American Exchange," 35 Boulevard Des Capucines, Paris.

THE ANALYST PUBLISHING CO.,
Publishers.

H. LASSING, M. D., } *Editors.*
T. P. McELRATH, }

No. 19 Park Place, ... New York.

NEW YORK, AUGUST 1, 1888.

CORRESPONDENTS AND EXCHANGES.

Please direct all business communications to

THE AMERICAN ANALYST,
19 Park Place,
New York.

ANSWERS TO CORRESPONDENTS.

B. M.—*I have just received from Montana a curious horned toad. With what shall I feed it?* The animal subsists in its natural state on insects, but when captive can get along for a long time without any food at all.

AMICUS, NEW JERSEY.—You are altogether wrong in attributing the sentence to Cicero. Nor do you quote it correctly. The saying belongs to Cato the censor (200 years B. C.) and, exactly translated, runs thus: "Wise men learn more from fools than do fools from the wise; for the wise avoid the errors of fools, while fools do not profit by the example of the wise."

HOUSEKEEPER.—*How can I extract, without risk of breaking, a stopper from a valuable cut-glass cologne bottle?* You can remove it by stretching firmly from opposite nails or hooks a strong cord six feet long, so that it will hang nearly straight and horizontal. Wind it around the neck of the bottle, and keeping it very tight move the bottle back and forth. This will soon heat the neck, and then the stopper will come out.

A. F. J., MILWAUKEE.—If you read our articles attentively you know our views on the subject, and we have said all we intend to say at present. You should be able to detect the admixture you name (ground cocoa nut shells with cinnamon) with the microscope; the physical characters of the substances being so perfectly distinct. If you have not an instrument of sufficient power, send the sample here and we will examine it for you.

ST. GEORGE.—*Is it true that the whole Kingdom of Great Britain contains only a quarter the number of miles of railroad contained in the United States?* The proportion is even less, In 1887 the United Kingdom of Great Britain and Ireland (which includes Scotland and Wales) reported officially 19,332 miles of railway. The United States at the same date had 137, 986 miles finished, or more than seven times as much as the former country.

BUTTER, PONTIAC, MICH.—We have no space for such a discussion as you suggest. Nor do we see, even if we had, what practical purpose would be served by it. We agree with you that REICHERTS method is—strictly speaking—unscientific, but you must allow that it is the only one by which absolutely uniform results may be obtained with convenience and dispatch. The loss of valuable fats by the evaporation of the alcohol is practically insignificant, and our advice to you is to follow the method as laid down by the author himself and leave all modifications alone.

MANUFACTURER.—You are right. The sulphuric acid made from pyrites invariably contains arsenic when in its crude form. The danger you mention, however, is easily surmounted, even if it really exists, which we doubt. We do not share your opinion in regard to the use of Sicilian Brimstone. What on earth is the value of chemical progress if we do not apply our discoveries to the utilization of our native mineral wealth? We infer from the general tone of your communication that you are unacquainted with the modern aspect of vitriol manufacture, and seriously advise you to consult some reliable and standard authority, say Lunge, for example.

FERMENT, CHICAGO.—Yes, you have applied the proper name to the phenomena you describe, but you seem to have made some confusion as to the agencies by which they are excited. In the first place, yeast and bacteria are *organized* ferments, whereas pepsin, pancreatin, trypsin and ptyalin, are *unorganized*, and are present as part and parcel of various animal secretions and juices. You must remember that the action of these ferments is entirely governed by varying conditions of heat and moisture, and that while they engender dissolution and decomposition, they never under any circumstances combine either with the body upon which they are acting or with those into which, through their action, that body is decomposed. Take the action of yeast upon saccharine substances, as an excellent example to illustrate the entire theory.

POISONS AND THEIR ANTIDOTES.

There is scarcely one of our important industries in which it is not necessary, if not constantly, at some one of the various stages, to employ dangerous and even highly corrosive and poisonous chemicals, and hence there are frequent deaths arising from their injudicious or careless manipulation by ignorant men and boys. All will remember a recent deplorable case where carbolic acid was mistaken for root beer, and where, as shown by the expert testimony, the loss of life might easily have been avoided by the timely application of a proper antidote; and we are persuaded that the same thing might be said in a majority of instances. Should not some plan be universally adopted to provide for any sudden emergency? As the case now stands we venture to say that there is not a factory in this city where if any individual were to swallow by mistake say, a dose of arsenic—his comrades, or even his employers would be capable of affording him relief! It seems to us that, in such a state of affairs, it would be a wise, not to say, a merciful measure, for all manufacturers, great or small, who make any use whatever in their business of poisons or other bodies deleterious to health and life to post a bold notice in some conspicuous portion of their premises, indicating the first remedy to be applied in case of accident, and pointing to where at some handy and convenient spot such remedies might be found. In order to do away with any further plea of ignorance, the following brief summary of the most rational and simple antidotes, to the commoner forms of poison in daily use by artists and artisans, has been compiled for the AMERICAN ANALYST by Dr. Francis Wyatt, and it will be seen that he has suggested the most appropriate to be applied in any emergency, pending the arrival, or in the total absence of a skilled medical practitioner. It is probable that even the latter may be grateful to us for suggestions which might otherwise escape him in the hurry of the moment, and in any case, they cannot fail to be useful, at some time or other, to a large number of our friends and readers:

POISONS	ANTIDOTES.
1st.—Acid—Carbolic, Sulphuric, Nitric, Muriatic, Nitro-Muriatic, Creosote, Iodine, Phosphorous.	White of Egg well beaten up with water. A teaspoonful of Mustard flour in a cup of hot water. Very thick Lime water—(in the case of Sulphuric, Nitric, Muriatic or Nitro-Muriatic Acids.)
2nd.—Chromic Acid, Chromates, all preparations or compounds of Chromium, Antimony, Copper, Mercury or Zinc.	Abundance of White of Egg in water. A teaspoonful of Mustard flour in water. Copious draughts of an infusion of Salt Herbs.
3rd.—Ammonia, Soda, Potash, Alkaline, Silicates and Sulphates.	Strong Vinegar and water. Large doses of Oil. Large doses of Milk.
4th.—Prussic Acid and its Salts, all Cyanides and Sulpho-Cyanides, Oil of Bitter Almonds and Nitro-Benzine.	Continuous and heavy douches of ice cold water over the head and spinal column. Mustard plasters on the stomach and soles of the feet. Prevent sleep.
5th.—Ether-Petroleum, Benzine, Fruit Essence, Concentrated or Absolute Alcohol.	Plenty of Mustard flour in large quantity of hot water. Cold water douches. Fresh air. Prevent sleep absolutely.
6th.—Compounds of Baryta and Lead.	A teaspoonful of Mustard flour in warm water. Strong solutions of Epsom Salts and Glauber's Salts in cold water.
7th.—Compounds of Arsenic.	A teaspoonful of Mustard flour in warm water. A teaspoonful of dialysed iron mixed with the same quantity of calcined Magnesia, every five minutes for one hour. Then plenty of Oil, or Milk, or some mucilaginous tea—say *Linseed.*
8th.—Oxalic Acid and its Salts.	Very thick paste of Lime and water by large spoonfuls at the time. After several of these, large draughts of Lime water. Finally 4 ounces Castor Oil.
9th.—Nitrate of Silver.	Large doses of ordinary kitchen Salt dissolved in water, after which one teaspoonful of Mustard flour in warm water.
10th.—Nitrous fumes or vapors, arising in Vitriol or Chemical Works.	Frequent and small doses of strong Acetic Acid—the stronger the better.

POPULAR IGNORANCE OF FOOD VALUES.

It is strange that with all the strong feeling of the American people in favor of popular education, so few efforts should be made towards educating the public in what is perhaps the most important field of secular knowledge. We mean knowledge of the properties of food material. Certainly nothing is more important, physically, than for a person to understand what he is eating and what its effects on his bodily health will be. Yet it would be hard to name anything of which our people are more ignorant than of the true character of the food they too often devour instead of eating. It is safe to say that not one per cent. of the American people have anything more than absolutely empirical knowledge of what food is best suited to their individual necessities, and certainly no greater proportion of eaters think of applying any other test than of their senses to determine the fitness of any alleged food that may be presented to them. It is difficult to see why this should be true of so intelligent a people as the Americans. If the subject were one that only interested a class, or practically employed only a single profession or trade, such knowledge might fairly be called technical, and carelessness in regard to it would be perfectly excusable on the part of anybody outside that class. But everybody must eat. Everybody suffers from the use of poor food. Everybody in this country can get good food. Yet the Chinese wall of custom and tradition is no more absolute and fixed than the habit of the American to "eat what is set before him and ask no questions." This rule, however golden it may be in religion or courtesy, inculcates a positive crime in its broad general application. In no other country on the globe are the food resources greater or the variety wider, and nowhere else can the actual food necessary for the family be earned with less labor by the breadwinner. Yet nowhere else is the crime of adulteration more prevalent or more

lightly considered, and nowhere else does the tradesman who is guilty of it prosper more steadily and easily than among us. The purchaser, by reason of the ignorance that is almost universal, is absolutely at the mercy of the tradesman, and even in many cases when positive injury is done to the health that same ignorance prevents the tracing of the cause, and the offence is repeated again and again, till sometimes the forfeit is paid by life itself. What is the remedy for so great an evil? Manifestly it is to strike at the cause. Some people are ignorant, and no thinking observer will deny that the most of our people are ignorant on this subject; they should be enlightened. To some extent every individual must determine for himself what is the most wholesome food for him, but a knowledge of general laws will aid greatly in such experiments, and without a knowledge of general laws it is impossible to distinguish pure from impure food, the genuine from the adulterated. Some knowledge of chemistry and of physiology is necessary, and at least the elements of these two sciences ought to be taught to every school girl and boy. It is, however, too much to expect that our public school system will be, for a long time to come, divorced from political management and influence sufficiently to allow the teaching of what are absurdly called the "higher branches" at the public expense.

Meantime, THE AMERICAN ANALYST is spreading among its readers knowledge not readily acquired from other sources, which is of greater value than anything else that can be presented.

SUMMER INSECTS.

The chief drawback to summer is the friendly insect. He converts peace into discomfort, ease into pain, and, too frequently, piety into profanity. Wire-nettings, gauze-screens and mosquito-canopies he laughs at, and scorns pursuers and pursuit. Yet a little aid from chemical science destroys his career of uselessness. To drive and keep flies and mosquitoes from a room may be accomplished by sprinkling an ounce of carbolic acid dissolved in a quart of warm water upon the floor and furniture. A rose-syringe or a large atomizer affords the best means of sprinkling. If the odor of the carbolic acid is unpleasant, oil of pennyroyal is the next best "insectifuge." Below this are the oils of peppermint and thyme. Carbolated vaseline or oil of pennyroyal rubbed upon the face and hands will keep away the little pests. To remove the pain of mosquito-bites, strong ammonia should be applied to the puncture. Ether dropped or rubbed on the inflamed surface evaporates rapidly and generally stops the smarting. Nearly all the strong essential oils used in toothache are of great value in this regard. Pike's Toothache Drops, Davis' Painkiller, creosote, oil of cloves, cinnamon, pennyroyal, peppermint and thyme, laudanum and petroleum ether readily give greater or less relief. The various preparations in the market such as Mosquito Banisher, Anti-mosquitolin, Insecticide, Insectifuge, etc,, etc., are made from the articles mentioned, and are each and all good in their way. Most of them, however, cost more than a person can buy their ingredients for. They are very convenient, nevertheless, and should be carried into the country by travelers proposing to go far from civilization.

MANKIND'S TRUST IN MAN.

It is not hard for even a casual thinker to perceive how absolutely shallow is the pretence of the cynic who declares that he trusts nobody—unless, indeed, that cynic makes his profession good by quitting human society and living in the wilderness. Not a day passes when we, who go about in civilization's ways, do not all of us trust our lives, and, what is even more precious, our health, in the hands of utter strangers whom we never saw, and concerning whose character we know nothing. Take the railroad ride for example. What do we know of the workmanship of the car that carries us, the engine that draws us, the road we travel over? What guarantee have we that there has been any thorough inspection of late, that there is a careful and competent system of signals, that every man on the road is at his place, that all are sober and vigilant, that none of them will make mistakes? Yet a single lapse of duty, or a simple defect of workmanship or material, often costs a score of lives. Again, how many of us know anything of the construction of the houses we choose to live in or of the sanitary conditions of the places we visit? We walk blindfold among possibilities of crime or of still more culpable ignorance, and we sleep surrounded by chances for the negligence of others to work our destruction. Yet all this is as nothing compared with the fatuitous, blind confidence with which we eat and drink all manner of things unknowing whether they are fit for use. At this season of the year, especially, the well-to-do man sends his dear ones forth to rusticate away from home, knowing that as a rule they are more ignorant than he of the proper conditions of life and health, but blindly confident that they will return after the summer refreshed and strengthened. He seldom considers the perils of hotel life, where ignorant servants and strange cooks have charge of their food, and where some stranger whom he knows probably only through an advertisement takes their lives in his hand for a season. It is not to be assumed that this confidence in mankind is wholly wrong. Civilization would perish if it were eliminated. But it behooves every man to guard against the perils of civilization as vigilantly as he would against those of barbarism. We cannot test the railroads we travel over, but we may and should have a care concerning those things which concern the table.

COUNTRY DRINKING WATER.

At this season of the year one-fifth of the population of the great cities turn itself "out to grass." Where evil and not good is done by the country summering it almost invariably results from impure drinking-water. The first duty of a person who goes out of town in the dog-days is to examine the water supply of his new home. If it is clear, odorless, tasteless and colorless, and above all if it does not become turbid after boiling, cooling and settling, it is safe and wholesome. Every other kind should be examined by a competent physician or chemist before it is used regularly by one to whom it is a stranger. While a majority of these impure waters are not dangerous, a very large minority are harmful. Those which contain much mineral substances are frequently powerful cathartics and diuretics. Their effect upon children is greater than on adults and is equivalent to a serious cholera morbus or cholera infantum. Those which contain decaying organic matter, especially sewage and drainage are more objectionable, producing typhoid conditions of the human system. Water of this type created the terrible epidemic of Plymouth, Pennsylvania, and one year drove nearly every guest away at Pine Hill among the Catskill Mountains. Equally vile is water which arises in swamps and carries with it animal and vegetable germs. Besides the disorders mentioned, it causes such complaints as fever and ague, intermittent fever typhoid, diarrhœa and dysentery. A brief and inexpensive examination by any expert will show to what class a water belongs, and will both ensure that health which people seek in the country and prevent those maladies which too often make a summer in the hills and fields a dreary siege of sickness and of suffering. Too much attention can not be paid to this subject by mothers and fathers. Important as it is to them personally, it is a thousand times more important to the little folks whose constitutions have not hardened and grown strong enough to meet the strain and pressure of changing modes of life.

INTERFERING WITH AMERICAN COMMERCE.

The Canadian Pacific Railroad, connecting the Atlantic with the Pacific Ocean at Vancouver, is, though a new enterprise, already a formidable rival to our own transcontinental lines of railway, and is reported to be mercilessly cutting into their business. While Congress, by its inaction, has failed to foster by judicious legislation the shipbuilding industry and the foreign carrying trade, England by her system of subsidies to powerful lines of steamships from Halifax to Liverpool, and from Vancouver to China, Japan and Australia, has prepared the way, with the assistance of the Canadian Pacific Railway, to complete the chain by rail and ship half around the world, and has made a channel of trade into which a large part of our business is rapidly being drained. This trade line of Great Britain is fortified on the Pacific, and everything is arranged to secure its being kept open and in operation. The object is to make Vancouver, with its harbor, the port of entry of the Pacific coast. It behooves Congress to put an effective stop to this assault on American trade by legislation competent to protect our producers and our merchants from being the feeders of British subsidized steamships and railways. No time should be lost in the matter. Day by day the volume of trade, directed into the treasury of the Canadian Pacific road, increases under the steady infusion poured into it of patronage from the United States. We observe that the *Marine Journal*, in alluding to the injury we are experiencing from this source, urges that a duty of 40 per cent. should be levied on imports from foreign countries over the Canadian Pacific. That, doubtless, would protect our trade with Japan and China. Our internal commerce would be protected by an import duty on goods shipped by the Canadian Pacific when re-entering the United States. There are other things, too, that must be done by Congress to provide against this new raid on our commerce.

PROVISION EXPORTS IN JUNE.

The Bureau of Statistics at Washington reports that the total value of beef, hog and dairy products exported was $7,649,530, against $7,967,669 during June, 1887, and for the six months ended June 30, 1888, the value was $40,950,313, and in June, 1887, $40,532,515, an increase of $418,798. In dairy products the exports in June were valued at $1,295,879, against $1,623,190, a decrease of $327,311. Among other details, we find that the value of canned meat exported was $229,069 against $132,949, an increase of $87,750; but for eight months there has been a decrease of $235,911, being $2,102,073, against $2,337,984 during eight months ending June 30, 1887.

WHAT FRENCH WINES ARE MADE OF.

A pleasant report comes from Spain concerning the spirit now used in the preparation of wines which are exported in such immense quantities to France, and are sent thence all over the world as French wines. This article is known as industrial alcohol, or German spirit, and comes chiefly from Berlin, where it is distilled from potatoes, beet and other roots, cereals, and, it is said, even from sawdust. It is without color, and is alleged to be free from fusel oil; but it contains acids far more pernicious than the oil, and most deleterious to the health of the consumer. How rapidly it has come into use for the purposes of the manufacture of spirituous liquors, liqueurs and the fortification of low-class wines may be seen from the fact that in 1850 the total quantity of alcohol imported into Spain was 140,096 gallons, while in 1860 it was 2,024,572 gallons; in 1870 it was 3,573,284 gallons; in 1880, 12,260,864 gallons; and in 1886 it reached the enormous quantity of 23,453,090 gallons. The bulk of this spirit appears to go to France

in the exported wines, with the alleged results of increasing the number of suicides in that country from the use of alcohol sixfold, of increasing the number of men unfit for military service fourfold, and of raising the percentage of lunatics from 9 to 16 per cent. of the population. The publication of these figures has aroused an agitation in both France and Spain which has compelled the Governments to take action in the matter, and the Spanish authorities, unable to forbid the importation of the obnoxious spirit because of existing commercial conventions, have issued a royal decree which provides that all spirits imported into the country shall be analyzed before being cleared at the custom house, and if found impure are to be methylated, but it is not thought that the decree will effect its object. The high-class Spanish sherries are, of course, not affected in any way by the use of this "industrial" alcohol in manufactured wines.

THE PROGRESS OF THE PERIOD.

The date of meeting of the American Society of Microscopists at Columbus, O., has been changed to August 21 instead of August 14; this on account of change of date for the American Association meeting.

On July 25th the House Committee on Agriculture decided to report the Lee bill to prevent the sale, manufacture or transportation of adulterated articles of food, drink and drugs; also a bill, defining lard and imposing a tax upon compound lard.

Exhaustive experiments in the manufacture of aluminum have recently been made at the Krupp works at Essen, Germany, with gratifying results. The metal is turned out pure in chunks; some of them weigh nearly 100 pounds, and the cost of production is said to be considerably less than 25 cents a pound. A company has been formed in England for managing the process on a large scale, and its patents also cover the manufacture of sodium, potassium and artificial cryolite.

Russian leather is made in Connecticut.

Bordeaux wine is manufactured in California.

Italian marble is quarried in Kentucky.

French lace is woven in New York.

Marseillaise linen is produced in Massachusetts.

English cassimere is made in New Hampshire.

Parisian art work comes from Boston.

Spanish mackerel are caught on the New Jersey coast.

Havana cigars are rolled by the million in Chicago.

Another disease has been classed among the germ diseases. Dr. Nicolaier, of Gottingen, states his belief that tetanus in man or beast is the result of a micro-organism of the rod form, whose spores are widely scattered over the earth. This microbe favors the production of poisons in the system into which it is introduced, which acts similarly to strychnine.

WHAT MAN DOES NOT KNOW.

THE LIMITATIONS OF OUR KNOWLEDGE OF NATURAL FORCES.

In the wonderful advance of scientific knowledge during the last hundred years, we are likely to overlook the many fundamental laws and phenomena of the natural and physical world of which we still remain in utter ignorance. We pluck the fruit from the wide-spreading branches of the tree of knowledge, but its roots remain hidden from our sight. The action and effects of the forces of nature are constantly becoming more and more familiar to us, and it is on this line that most of our progress has been made; but as to the nature of the forces themselves we are still ignorant. The constitution of matter has been a subject of dispute from the time of Aristotle, and it is not too much to say that we have no more absolute knowledge on this point than had Aristotle himself. Starting from the supposition that matter is not continuous, but made up of disconnected atoms or particles of definite size and weight, a most beautiful theory has been evolved which perfectly explains all the observed chemical and physical phenomena; but what chemist will venture to maintain the atomic theory as an actual and provable fact, in the face of many difficulties which such a conception of matter involves? The nature of light and heat is another question which is even more difficult to answer than the constitution of matter. They are certainly immaterial, possessing neither weight nor volume. The modern theory considers them as a force, or mode of vibratory motion in a hypothetical substance called *ether*. But the existence of the ether has never been proved; and, in fact, if it does exist, it must possess properties varying widely from any forms of matter with which we are acquainted. All that can be said is, that, granting its existence, the phenomena of light and heat admit of a ready explanation. Electricity is another substance concerning the nature of which we know absolutely nothing. To the question, What is electricity? there is but one answer—We do not know. We do know what it will do, and can make it serve us in an infinite variety of ways; but the most learned electrician is only in the same position as that of a little child who can move the lever which controls a great engine, but knows nothing of its construction, or how the motion is produced. Chemical affinity offers a multitude of perplexing questions which as yet no one can answer. Why does the oxygen of water leave the hydrogen to which it is joined, to unite with the sodium which is brought in contact with it? Why are the proportions in which the different elements unite among themselves, fixed and invariable? Why does fluorine combine so strongly with every known element but one, while nitrogen, when forced into combination, confers an element of weakness upon the entire compound? No one has yet answered these and innumerable similar questions. But the greatest mystery of all, and one of which we know the least, is that of the nature of life and mind. There is no appreciable difference between a mass of dead and living matter. It is only in the possibilities inherent in the two forms that we can recognize the difference. An animal grows, and so does a crystal; but no one would be likely to mistake one process of growth for the other. From the immense mammoth down to the microscopic bacterium or plant-spore, all are possessed of something we call life, which, as long as it exists, possesses the power of reproducing organisms similar to itself. We can, apparently, destroy this mysterious principle, but we cannot bring it back; and it is not probable that, in our present condition of existence, we shall ever know anything more regarding it. Some patient student of nature may be able in future years to give us absolute proof of what matter, light, electricity, and chemical affinity really are; but he who succeeds in imparting to the minutest quantity of dead matter the wonderful vital force, will have accomplished a greater and more wonderful work than all who have preceded him, and one which, as far as we can see at present, is beyond the range of human possibility.—*Pop. Science News.*

THE WORDS WE USE.

WHAT IS REQUIRED TO CARRY ON CONVERSATION.

The number of words in a person's vocabulary has been frequently and variously estimated. The old philologists thought that few persons used more than ten thousand words, while the ordinary unlettered man possessed from three thousand to four thousand words. It is well known that Shakespeare's vocabulary includes fifteen thousand words, and Milton's eight thousand words. A Swiss writer, M. Edmont de Beaumont, has recently made estimates far in advance of these. He maintains that rustics have at their command as many as seven thousand words; artizans, ten thousand; tradesmen, fifteen thousand; men of culture, twenty thousand, and university graduates, twenty-five thousand. The minimum number of words "without which one makes a pitiful figure in a conversation among cultivated persons is ten thousand." M. Beaumont himself claims to have the use of twenty thousand words in several languages.—*Science.*

FORKS.

THEIR USE A COMPARATIVELY MODERN INNOVATION.

Table forks appear to have been introduced in Europe by the Italians, and their use in England does not date further back than two and a half centuries. Up to the beginning of the seventeenth century our ancestors, it is to be feared, fed themselves with their hands. Monarchs and nobles and dames of high degree all ate in the simple fashion first set in the Garden of Eden. But in the year 1611 one Thomas Coryate, a travelled gentleman, first brought a very curious invention to the notice of the British public of the day. Thomas had journeyed in foreign parts, and, like the modern globe-trotter, conceived the idea of writing a history of his experiences and adventures. This book was quaintly entitled, "Coryate's Crudities, hastily gobbled up in a five months travel in France, Savoy, Italy, Rhaelia (commonly called the Grissons' country), Helvetia, some parts of High Germany and the Netherlands." It was in Italy that our observant Thomas first made the acquaintance of the table fork, which he thus describes: "The Italians and also most strangers that are cormorant (*sic*) in Italy, do alwaies at their meales use a little forke when they cut their meate. For while with the knife, which they hold in one hand, they cut the meate out of the dishe, they fasten their forke, which they hold in their other hand, upon the same dishe." The Italians of that period were seemingly a fastidious race, for, according to the author of the "Crudities," "the Italian cannot by any means endure to have his dishe touched with fingers, seeing all men's fingers are not alike clean." Thomas Coryate was so struck with the happy invention that he had a "forke" made for his own use, and was laughed at by those of his contemporaries who did not object to have their dishes "touched with fingers." He was called furcifer, or the fork-bearer, and had to endure as much raillery and obloquy, perhaps, as had the Bristol gentleman, later on, who first introduced umbrellas into England. The "forke" had a severe struggle for existence. The wits and satirists of the day made merry at the expense of the effeminate folk who preferred forks to fingers. John Fletcher, in his "Queen of Corinth," speaks of the "fork-carving traveller," and Jonson says in his "Volpine:"

> Then must you learn
> The use and handling of your silver fork.

Even so late as 1652 the use of the fork can have made but little progress. Heylin, in his "Cosmography," says, apropos of the Chinese: "They are much given to their bellies, and eat thrice a day, but then not immoderately, not touching their meat with their hands at all, and, therefore, no great soilers of linen. The use of silver forks with us, by some of our spruce gallants taken up of late, came from China into Italy and France and thence into England." The half-sneering reference to the "spruce gallants" shows that forks were hardly in common vogue even forty years after Thomas Coryate's endeavours on their behalf. And, again, the statement that the Chinese were no great soilers of table linen pretty conclusively suggests that the English of the day differed from the Chinese in that particular. It is nothing short of marvellous that the handy and cleanly fork should have met with such opposition at its introduction in England; but the fact remains that more than a hundred years had elapsed before the instrument became accepted by our British ancestors.

CREMATION.

STEADY GROWTH IN POPULARITY OF THE NEW SYSTEM.

Some eighteen months ago the French Senate passed a law providing for civil or religious funerals, and for burial or cremation, according to the desires of the parties interested, but as yet the administrative authorities have not determined on the conditions to be observed in the different modes of disposing of a body, and as yet Paris is without a proper crematory. Early in the year a commission was sent to Milan and Zurich to investigate the crematories in use in those cities. This commission reports that the Italians are not better off in Milan than the French in Pere Lachaise. Cremation at Milan lasts two hours; at Paris it lasts an hour and a half, with an expense of from fifteen to twenty francs. The commission estimates that the time is too long, but that the expense cannot be reduced. They hope to be able in a few months to effect a cremation in from one-half to three-quarters of an hour at the outside. In this connection, it may be mentioned that there exists in Paris a society for the advancement of cremation, numbering at present six hundred members. It seeks by all legal means to assure every person who desires it that his body shall be cremated after death. Membership does not imply any engagement to accept this method, but leaves complete liberty of choice. A society with similar objects is in successful operation in the city of New York also.

DOMESTIC DIETETICS.

SEASONABLE FOOD.

August.

MEATS. — Beef, mutton, lamb, veal, ham, kidneys, liver, venison.

GAME AND POULTRY.—Pigeon, chicken, duck, woodcock.

FISH.—Bass, blackfish, bluefish, clams, cod, crabs, eels, flounder, halibut, herring, lobster, mackerel, mussels, porgie, prawn, rockfish, salmon, trout, sea bass, sturgeon, turtle, white fish, whiting.

VEGETABLES. — Beets, beans, cabbage, carrots, cauliflower, corn, cucumbers, egg plant, garlic, lettuce, onions, parsley, parsnips, potatoes, radishes, rhubarb, savoy, shallots, spinach, squash, tomatoes, turnips.

FRUIT.—Apples, blackberries, gooseberries, huckleberries, melons, oranges, peaches, pears, pineapples, plums, raspberries, currants.

PRACTICAL RECIPES.

AMBER SOUP.—Fry a gill each of sliced onion, carrot turnip and parsnip in the fat of ham or bacon to a light brown; put them into the soup-kettle and to them add a sprig of parsley and of thyme, a bit of a bay leaf, five peppercorns and a couple of cloves. Cover with five quarts of stock and let it simmer for an hour, then strain; pour a little cold water into it, and when the grease rises skim it off and clarify the soup. Now heat it to the boiling point, season, add a tablespoon of caramel and serve. It should be as clear as amber if properly made.

BEEF-TEA WITHOUT HEAT.—Take one-third of a pound of fresh beef, mutton, poultry or game, minced very fine; place it in fourteen ounces of soft cold water, to which has been added a pinch, or about eighteen grains, of table salt and three or four drops of muriatic acid; stir all with a wooden spoon, and set it aside for one hour, stirring it occasionally; then strain it through a gauze or sieve, and wash the residue left on the sieve by means of five additional ounces of cold soft water, pressing it, so that all the soluble matter will be removed from the residue; mix the two strainings, and the extract is ready for use.

TOMATO AND WHEATMEAL PORRIDGE.—Slice half a Spanish onion into less than a pint of boiling water. When it boils up again sift it with the left hand, and stir with the right, two or three good tablespoonfuls of coarse wheatmeal. After it has boiled ten minutes, add a tablespoonful of pea-flour, mixed with cold water. It will soon be very thick. Add three parts of a breakfast cup of tomatoes by degrees, stirring well. Some dried herbs are an improvement. It takes half an hour to cook.

COD SOUNDS.—Cleanse the sounds thoroughly, simmer them for a short time, flour and broil till just tender, stew in white gravy which has been seasoned, add a little cream, a bit of butter, a spoonful of flour rubbed smooth in a little milk. Let it come to a good boil, flavor with nutmeg, a bit of lemon peel, a dash of powdered mace, and serve.

COOKIES.—One-half cup of shortening, three eggs, one cup of sugar, two teaspoonsful of Horsford's baking powder, flour, one teaspoonful of extract of vanilla; roll thin.

TO MAKE GINGER WINE.—Alcohol of ninety-eight per cent., one quart; best ginger root, bruised, one ounce; cayenue, five grains; tartaric acid, one drahm; let stand one week and filter, or draw off by faucet above the sediment. Now add one gallon of water in which one pound of crushed sugar has been boiled. Mix when cold. To make the color, boil one-half ounce of cochineal, three-quarters ounce of cream of tartar, one-half ounce of saleratus, and one-half ounce of alum, in one pint of water, until you get a bright red color, and use a proper amount of this to bring the wine to the desired color.

CREAM BISCUIT.—Take two pounds of flour, tablespoon of butter, three tablespoons of sugar, one egg, one ounce of bicarbonate of soda, one-half ounce of ammonia, one-eighth ounce of cream of tartar, one-fourth cup of water, and sufficient oil of lemon to flavor. Roll and cut out the biscuits, drop them for a minute in boiling water, take them out and put them in cold water; then lay them on a cloth to dry; now put them on baking sheets at a little distance apart, and bake.

SALAD.—Scald and peel two or three ripe tomatoes, lay in ice water till very cold, then slice them. Peel and slice very thin, one or two small cucumbers. Put some fresh lettuce leaves in the salad bowl with one small, finely sliced spring onion; add the tomatoes and cucumbers and serve with a plain dressing.

CRANBERRY PIE.—Prepare as for sauce, stewing two pounds fruit to one pound sugar. Pour into a pie-plate ined with paste, cover with a top crust and bake.

STEWED GOOSEBERRIES.—Take off the stems and blossoms and wash; put them in the fruit kettle, allowing two quarts of water for six of berries. Heat to boiling slowly, skim and add two cups of sugar; now cook for five minutes and the fruit is ready to use. If they are rather green cook a little longer, slowly, and add more sugar.

WAFFLES.—Mix thoroughly two and a half teaspoonsful of Horsford's Baking Powder with one quart of sifted flour; while dry, add half cup of butter, three well beaten eggs and milk enough to make a suitable batter, fill your waffle irons about two-thirds full.

FROGS AS FOOD—Frogs are now in season as well as other spring French delicacies. They make their appearance at the poulterer's every morning strung on wooden skewers. The *grenouille* is liked, however, not only by *gourmets*, but by invalids, the flesh being more tender than that of a spring chicken, and when served with a cunningly prepared sauce not too "pronounced" in flavor, is said to be healthy and refreshing; but some Gauls go further than picking Batrachian thighs. They like "frog broth," and will tell you that a dozen *grenouilles*, boiled gently for a brief time, will make an exquisite *potage*. Others vaunt the merits of a "frog fricassee," surrounded by white caper sauce.—*British Journal of Catering.*

SICK HEADACHES.

While both sexes are subject to that peculiarly depressing and unpleasant complaint, sick headache, yet womanhood appears to be far more susceptible to its ravages. Its symptoms are so well known as to scarcely deserve recapitulation. The loss of appetite, the inability to think or work, the irregular action of the vital organs—now burning into a hot fever and then slackening into a clammy chill—the pain in the head and the determination of the blood to the brain and the upper portion of the spine are familiar to any one who has once suffered from the disorder. It seldom afflicts those who make large use of their muscles. Athletes, laborers and domestic servants are notoriously exempt from its attacks. But with those of sedentary habits the case is the very opposite. Among men, book-keepers, accountants, editors, lawyers and clergymen are its chief victims, while among women it is almost of universal prevalence. The greater the leisure and the ease of a woman, the more frequent and serious is the disease. When it makes its first appearance it is usually of short duration, but ere long it comes again, and this time longer and more distressing than before. After three or four attacks the sufferer may be said to have the headache habit, the least cause imaginable being sufficient to bring on a sick spell of the worst type. The cause of this disorder, which, while not fatal, is far more tormenting and disagreeable than more serious complaints, lies partly in the muscles and partly in the blood. On the one side there is that softness and flabbiness of the great tissues of the body which results generally from the lack of exercise. The amount of vitality generated is small, and being expended in the routine of daily pursuits affords little or nothing to the upbuilding and preservation of the constitution. On the other hand, the action of the vital organs is enfeebled, and the blood becomes clogged with impurities. The waste of the body, the humors that are introduced into the circulation from the outside, and the products which are formed by the slow combustion of heat-forming elements are not removed by the lungs, kidneys and pores in normal quantity, and remain in the blood to vitiate all the organic processes.

Such being the cause of sick headache, the cure and preventive are readily seen. They are two-fold in nature: one-half consists in stimulating and strengthening the muscular system by exercise, fresh air, sunlight, lukewarm bathing, regular hours and a generous diet; the other half consists in the purification and regeneration of the blood. This demands not only the removal of all impurities, but also the restoration of its normal tone and composition. The latter involves the strengthening of the vital processes, and especially the invigoration of the excretive functions.

All these can be easily accomplished by the employment of Ayer's Sarsaparilla, the greatest blood purifier known to medicine and science. An exquisitely compounded combination of the finest alteratives and remedials recommended by the faculty, it not only drives all humors promptly, pleasantly and thoroughly out of the system, but it also stimulates and restores all the vital functions. As a result, the humors which are free in the circulation are promptly consumed in the lungs or expelled through the renal ducts. Those which are more stationary are rapidly attacked, dissolved and treated in the same manner. The increased tone and vitality of the great organs reinvigorate the brain and nerves, and so prevent all further sick headaches. In this change it is to be remarked that the nerves which carry sensations to the brain and those which convey volition or action, as well as the blood brought by the arteries, are restored to the normal condition, while the brain itself now enjoys new strength and health. Other remedies may be of occasional use and temporary benefit, but Ayer's Sarsaparilla absolutely prevents and radically cures sick headache.

REFLECTED LIGHTNING.—Lightning can be seen by reflection a distance of 200 miles.

BUSINESS NOTES.

TORTURED CHILDREN.

The report of the London Society for the Prevention of Cruelty to Children shows that in the midst of civilization there are monsters under the name of parents, who retain some of the worst impulses of ferocious savages. In our homes one form of unintentional persecution is common, which authorities agree often permanently impairs the welfare of the young. This is the enforced application of the harsh Bristle Tooth Brush on their tender teeth and gums. Until recently nothing better was known, but invention has supplied a new principle, which children, even from early infancy, enjoy the regular use of, and which is soft and pleasant to their gums, and keeps their teeth clean and bright, with great benefit to their health and appearance. One of the most skillful, successful and conscientious dentists of New York State, Dr. Retter, of Utica, after a thorough test of this new principle, writes: "I regard felt as admirably adapted to cleanse and polish the teeth. As a cleanser of children's teeth, the Ideal Felt Tooth Polisher has no equal." It is gradually becoming a necessity to young and old, as its results are better known.

MELLIN'S FOOD.—Constantly increasing sales have necessitated increased facilities for the manufacture of this deservedly popular infants' food.

IMPEROYAL FLOURS, though not so much in demand in the hot season, are still maintaining large demand, which indicates a growing popularity.

KINGSFORD'S STARCH, the oldest starch now in the market, is sold at the same prices as ever, a little higher than any other. As people will buy it at the higher price, it must be that they prefer it, and justly so, because it deserves popular confidence.

COLDEN'S LIQUID BEEF TONIC is as popular as ever.

CASHMERE BOUQUET TOILET SOAP sells, to those who know a first-class soap, as widely as ever.

HORSFORD'S ACID PHOSPHATE is in universal use this summer. Many use it in place of lemon juice for lemonade, and all who enjoy the various fruit phosphate syrups in druggists' soda water are getting the benefit of this tried and approved preparation.

BOVININE is steadily progressing in the esteem of physicians who employ it. Patients who take it, like it, and because it keeps well, can enjoy its beneficial effects.

CIDER, pure as unadulterated apple juice can furnish it, and preserved by experienced hands, may be had of T. P. Rogers & Son, in quantities to suit.

LEA & PERRINS' WORCESTERSHIRE SAUCE has not yet been successfully imitated. All others have a decidedly unpleasant taste.

CALIFORNIA CHAMPAGNE.—The Eclipse, as made by Arpad Haraszthy & Co., of pure, unadulterated specially cultivated California grapes, is proving the possibility of our ability to furnish an American champagne superior to the majority of the imported article.

THURSTON'S TOOTH POWDER, which has been a standard preparation for years, is still largely increasing its sales.

THE TRIMBLE WHISKIES, of White, Hentz & Co., like old wine, need no bush.

COLBURN'S MUSTARD, the king of condiments, is deservedly popular.

ESTERBROOK'S PENS are truly mightier than the sword. They just suit everybody.

FOREST CITY BAKING POWDER, well made and always running equal, is the most popular of its kind.

PEACOCK'S BROMIDES are enjoying a vast sale, holding every old consumer and rapidly gaining new friends.

BILLET SARDINES are the favorites for picnics and yachting parties. They are sardines, indeed, in which there is no guile, in the way of other fish or bad oil.

ROBERT GORDON, in his preserved sea foods, is truly a benefactor to those who could not otherwise obtain this treat.

CUTTER WHISKEY needs only to be mentioned to awaken a thought of fine goods of standard quality.

ATHENE SKIN SOAP is deservedly gaining public favor as a pure, well-made toilet soap.

The advertising patronage of THE AMERICAN ANALYST is so extensive that we must defer to a future issue the mention of other advertised goods.

OIL OF PEPPERMINT.—Oil of peppermint in vapor dilluted even to 1 part in 100,000 will kill cockroaches in an hour, they dying in convulsions. One drop of the oil placed under a bell-jar covering a cultivation of cholera bacilli will kill both bacilli and spores in forty-eight hours. It is also regarded as among the best surgical antiseptics, and of great value in phthisis and diphtheria.

SUB-AQUEOUS FIRE—Fire under water can be produced by placing a small piece of phosphorous in a conically shaped glass filled with water, and some crystals or chlorate of potash covering the phosphorous, and then pouring through a long tube, funnel or glass tube a few drops of sulphuric acid down on the mixture at the bottom of the glass. Tongues of flame can be seen flashing up through the water. The intense chemical action produces sufficient heat, and oxygen fire will burn whether in air or water.

A SET BACK TO ALL PREVIOUS INVENTION.

EDUCATION Quick vs. Old System **Dead.** Education-almost by machine process. As mind is above matter so is this method (simply by seven words) above all previous invention of whatever kind. **A Wherewithal Book, $1.00 Form.**

We **guarantee** you will be more than **satisfied.**

If you wan tthis method remit $1 00 by Registered Letter or send Check and receive by mail a great **possibility** from the sole originators and proprietors of the **New Education,**

WHEREWITHAL COMPANY Philadelphia, Pa.

Horsford's
ACID PHOSPHATE.

A preparation of the phosphates of lime, potash, magnesia and iron, and phosphoric acid, in solution, that is readily assimilated.

Especially recommended in all cases where the use of phosphoric acid or the phosphates is indicated, such as exhaustion of the physical, nervous and cerebral systems, gastric and liver derangement, gravel, and other calcareous deposits, cholera, scurvy, consumption, etc.

As a menstrum for the administration of strychnina, morphina, quinina, and other organic bases which are usually exhibited in acid combination, it is unsurpassed.

It makes a delicious drink with water and sugar only, and harmonizes with such stimulants as are necessary to prescribe.

Dr. G. F. WILBER, Nashua, N. H., says: "It is a very elegant method of using phosphorus."

Dr. T. C. SMITH, Charlotte, N. C., says: "I attach the highest importance to it as a therapeutic agent, of well-defined and specific value."

Dr. C. EARLE, Pontiac, Mich., says: "I do not hesitate to recommend it to the confidence of the profession."

Dr. T. B. PORTER, Freeport, Ill., says: "It is an excellent therapeutic agent."

Dr. I. W. MARTIN, Des Moines, Ia., says: "I take pleasure in adding my testimony as to its therapeutic value."

Dr. E. BROWN, Omaha, Neb., says: "I find it a very useful remedy."

Send for descriptive circular. Physicians who wish to test it will be furnished a bottle on application, without expense, except express charges. Prepared under the direction of Prof. E. N. HORSFORD, by the

Beware of Substitutes and Imitations.

RUMFORD CHEMICAL WORKS, PROVIDENCE. R. I.

YELLOWSTONE NATIONAL PARK, PACIFIC COAST AND ALASKA.

The Yellowstone Park is unquestionably attracting more attention at the present time, as a tourist resort, than any other place on the face of the earth. This spot is reached by rail only by the Northern Pacific Railroad, the famous dining-car line to the Pacific Coast, the only one of the transcontinental lines running dining cars of any description whatever. A book ticket will be sold at the Eastern terminals of the Northern Pacific for $110, including rail and stage transportation, meals on dining cars, Pullman and five day's accommodations south of Livingston in the Park.

The Alaska tour is also one that is attracting wide attention. The rates and facilities offered for making this trip are better via the Northern Pacific Railroad than by any other line. The attractions offered *en route* via the Northern Pacific, such as the ride through the Lake Park region of Minnesota, by the great wheat fields of Dakota, along the Yellowstone River and Clark's Fork of the Columbia, through the famous Spokane Falls region, over the Cascade Range, by the Palisades of the Columbia, Puget Sound, etc., together with the superior accommodations offered, make a trip by this route especially enjoyable. By writing Charles S. Fee, General Passenger Agent, M. P. R. R., St. Paul, Minn., you will receive copy of "Wonderland" and other books descriptive of the Yellowstone Park, Alaska and the country in general traversed by the "Dining Car and Yellowstone Park route."

A VALUABLE DISCOVERY.—A workman in the Carson mint has discovered that drill points, heated to a cherry red and tempered by being driven into a bar of lead, will bore through the hardest steel or plate glass without perceptibly blunting.

OUR SPECIALTIES ARE

Choice Bottled Ciders

—AND—

Pure Cider Vinegar,

For Hotel and First-Class Trade.

T. P. ROGERS & SON,

370 to 376 Washington Street,

NEW YORK.

Good Agents

To obtain Subscriptions for

AMERICAN * ANALYST

WANTED ON LIBERAL TERMS

$93 Sewing Machine Free!

We want one person in every village, town and township, to keep in their homes a line of our ART SAMPLES; to those who will keep and simply show these samples to those who call, we will send, free, the very best Sewing Machine manufactured in the world, with all the attachments. This machine is made after the SINGER patents, which have expired. Before the patents run out, this style machine, with the attachments, was sold for $93; it now sells for $50. Reader, it may seem to you the most WONDERFUL THING ON EARTH, but you can secure one of these machines ABSOLUTELY FREE, provided your application comes in first, from your locality, and if you will keep in your home and show to those who call, a set of our elegant and unequaled art samples. We do not ask you to show these samples for more than two months, and then they become your own property. The art samples are sent to you ABSOLUTELY FREE of cost. How can we do all this?—easily enough! We often get as much as $2,000 or $3,000 in trade from even a small place, after our art samples have remained where they could be seen for a month or two. We need one person in each locality, all over the country, and take this means of securing them at once. Those who write to us at once, will secure, FREE, the very best Sewing Machine manufactured, and the finest general assortment of works of high art ever shown together in America. All particulars FREE by return mail. Write at once; a postal card on which to write to us will cost you but one cent, and after you know all, should you conclude to go no further, why no harm is done. Wonderful as it seems, you need no capital—all is free.

Address at once, TRUE & CO., AUGUSTA, MAINE.

Ask Grocers for our Patent Barley **CRYSTALS**, a new, unrivalled **Cereal Food**, for Breakfast Tea & Dessert. If not sold there, write us for free samples. **GLUTEN FLOUR** and **SPECIAL DIABETIC FOOD** are invaluable waste-repairing flours for **Dyspepsia, Diabetes, Debility & Children's Food.** No bran; mainly free from starch. For all family uses nothing equals our **HEALTH FLOUR.** Send for circular offering 4 lbs. free. **FARWELL & RHINES, Props., Watertown, N.Y**

LEA & PERRINS' SAUCE.

Lea & Perrins', the original and genuine Worcestershire Sauce, has been before the public over a half a century. Like all popular favorites it has long been the standard of comparison and the pattern for counterfeiters who not being able to imitate its excellence offer to the public imitations in bottling, labels and style of putting up. They dare not counterfeit the signature of Lea & Perrins which is on the red label of every genuine bottle, and of which this is a facsimile.

Lea & Perrins

To be sure of obtaining the genuine article, see that the above signature is on the label.

ANALYZE "MONON" Resolutions!?

Whereas, The Monon Route wishes to make known to the world that it has the finest system of Pullman Buffet Sleepers and Chair Cars, running between Chicago and Louisville, or Chicago, Indianapolis and Cincinnati;

And Whereas, This makes it in fact the double connecting link of Pullman travel between the winter cities of Florida and the northern summer cities; then

BE IT RESOLVED, That, before starting on a trip, be sure and address E. O. McCormick, Gen'l Pass. Agent, 185 Dearborn Street., Chicago, for rates, etc.

Natural Lithia Water.

FARMVILLE LITHIA WATER

FROM VIRGINIA.

—*Not only Relieves, but*—

CURES

Bright's Disease, Kidney Troubles of all Kinds, Rheumatism, Rheumatic Gout, Dyspepsia, Bladder Troubles, Diabetes, Calculi, Albuminuria. Without Taste or Odor. An Unapproachable Record in Results.

Sold by HAZARD, HAZARD & Co., Fifth Avenue Hotel, and other first-class Pharmacists. Pamphlet free upon application.

FARMVILLE LITHIA SPRINGS CO.,

298 Broadway, New York, and Philadelphia.

Subscriptions $1 per year. Now is the time to subscribe.

OUR MISSION.

WHAT THE AMERICAN ANALYST IS DOING.

FIGHTING ADULTERATION.

The steadily growing favor which the AMERICAN ANALYST is constantly receiving at the hands of both the reading and the business public is the best evidence that could be afforded of the useful field of effort it occupies. It was the pioneer journal in this country to take up the fight against adulteration, and stands to-day, by public acknowledgment, the only competent exponent of the principles involved in that momentous struggle. To this end the realm of sophistication and fraud has been thoroughly explored, and its corruptions, as far as practicable, exposed to the public view. Charlatans, adulterators, and handlers of poisonous food have been summarily and uncompromisingly dealt with. Humbugs seeking to enrich themselves, through the sale of high-sounding specifics for human ailments, have been subjected to the crucial test of thorough chemical analysis of their goods, and where the latter, as too frequently occurred, proved to be utter frauds in name, composition, and pretended effects upon the system, the real facts have been placed before our readers in order to save the public from further unconscious imposition. The veil of chemical mystery in which tricksters of this kind ostentatiously envelop their processes of manufacture, protects them as yet from the criminal laws to which other confidence operators are held amenable, and the only method for counteracting their nefarious schemes is through public exposure by the newspaper press. In exposing this species of fraud, the AMERICAN ANALYST has conferred a benefit upon the community, to which the latter is giving grateful and substantial recognition.

SANITARY AND FOOD REFORMS.

In addition to the foregoing, the AMERICAN ANALYST is in constant co-operation with the Boards of Health of this and other cities, in efforts to secure sanitary and food reforms through organized methods, and while it is nobody's mouthpiece, it is conceded to be the only popular medium through which those bodies can bring their purposes and action intelligently before the general public. Reaching as it does all classes, manufacturers, merchants, physicians, chemists and private families all over the land, its influence is exerted over a vast radius, producing results as visibly marked as they are widespreading.

HOUSEHOLD MATTERS.

"Domestic Dietetics" is a department of special interest to ladies. It is very different and far superior to the ordinary cook book in that it tells the housewife suggestively what to buy, what foods are in season, as well as how to prepare the many varieties of dishes, all in a practical way easily followed. Other matters of great interest to housewives are also discussed.

PRACTICAL DISCUSSIONS.

Numerous other interests are also faithfully represented in our columns, such as the regular series of articles entitled, "Some Every Day Suggestions," relating to common experiences of society, the question of hygiene, and an infinite variety of practical subjects. In short, the AMERICAN ANALYST always keeps abreast in giving the fullest information on all matters directly or indirectly in the line of its proper field.

SCIENTIFIC INVESTIGATION.

The business transacted in the office of the AMERICAN ANALYST does not by any means all come to the surface in the pages of the paper. Minute analyses of chemical compounds, careful assays of minerals, examinations of questionable oils or doubtful condiments, and the many subtle operations incident to laboratory work are constantly required of us by correspondents far and near, and the results in many cases are not publicly recorded. In this manner, the influence of the paper encompasses a vast radius, from every point of which we receive constant expressions of approval, verbally, and in more substantial shape.

SUBSCRIPTION $1 PER YEAR.

Considering the amount of practical information regularly embodied in its contents, together with the fact that the subscription price for an entire year is only one dollar we believe the day is approaching when the AMERICAN ANALYST will be regularly welcomed in every intelligent household in the land. Address,

ANALYST PUBLISHING CO.,
19 *Park Place, N. Y.*

GORDON & DILWORTH

MANUFACTURING PURVEYORS

Established 1847

ALIMENTARY PRODUCTS

ALL OF OUR PRODUCTIONS BEAR THIS TRADE MARK

WE WILL PROSECUTE ALL INFRINGEMENTS & IMITATIONS







CHOICE DESSERTS

OVER 100 DOMESTIC & FOREIGN FRUITS AND VEGETABLES TRANSMUTED INTO TABLE DELICACIES

PRICES ON PRESERVED FRUITS REDUCED 1ST DEC. 1885

PRESERVED, CANNED & BRANDY-FRUITS, FRUIT-JELLIES, VEGETABLES, TOMATO-CATSUP, SYRUPS & JAMS, SALAD-DRESSING, BLACKBERRY BRANDY, MINCE-MEAT, PLUM PUDDING, SWEET PICKLES, OLIVES & CAPERS, WINE-JELLIES, MARMALADE, SOUPS SAUCES &c.

SOLD BY THE LEADING GROCERS ON THE AMERICAN CONTINENT.

GRAND NATIONAL PRIZE OF 16,600 FRANCS.

QUINA-LAROCHE

VINOUS ELIXIR,

A STIMULATING RESTORATIVE AND ANTI-FEBRILE TONIC.

This meritorious ELIXIR, QUINA-LAROCHE, is prepared from the **three** Cinchonas; it is an agreeable and doubtless highly efficacious remedy.—*The Lancet.*

QUINA-LAROCHE, under the form of a vinous Elixir, contains the totality of the numerous principles of the **three** Cinchona barks. It is a preparation which renders great services to Therapeutics.—Extract of the *Gazette des Hôpitaux*, Paris.

Far superior to all Ordinary Cinchona Wines.

LAROCHE'S QUINA, tried by the Academy of Medicine of Paris, is a specially prepared Compound Extract of Quinquina, a careful analysis, confirmed by experience, has shown that most of the wines and syrups hitherto used have not contained all the properties of this precious bark, of these some, although beneficial, are altogether lost, while many preparations contain but half the properties of the bark in varying proportions.

Mr. Laroche, by his peculiar method, has succeeded in extracting all the active principles of the quinquina, combining these with *Catalan Wine*, forming an Elixir free from the disagreeable bitterness of other similar preparations. Practitioners have found triple advantages in the use of this Elixir; it is a *strong tonic*, is easily administered, and perfectly harmless, being free from the unpleasant effects of Quinine.

THE FERRUGINOUS QUINA-LAROCHE is the invigorating tonic *par excellence*, having the advantage of being easily assimilated by the gastric juice, without, in any way, deranging the action of the digestive organs, proving itself to be a most efficacious remedy in cases of impoverishment of the blood, **Anæmia, Chlorosis, Intestinal Hemorrhage, Castralgia, Exhaustion,** etc., etc.

PARIS.—22 RUE DROUOT.—PARIS.

Laroche

E. FOUGERA & CO., New York, Sole Agents for the United States.

SWIFT'S

Choice Chicago Dressed Beef

—AND—

MUTTON.

CAN be found at all times in full supply and at popular prices at the branch houses in all the larger cities and is ***retailed by all first class butchers.***

The trade of all marketmen and meat dealers is solicited for our Wholesale Branch Houses, and the ***public may rest assured*** *that in* ***purchasing our meat*** *from dealers they will* ***always receive the best.***

SWIFT AND COMPANY,

UNION STOCK YARDS,

CHICAGO, ILLS.

Tabasco Pepper Sauce

OR LIQUID PEPPER.

Is simply the Pulp of the Ripe Pepper Extracted by Pressure.

The seed of this Pepper was obtained from Central America, and by careful cultivation in Louisiana for many years has been so improved in strength, flavor and aroma, as to have become a new variety of Red Pepper, superior to all others. The pulp is so handled as to retain all the flavor, strength, aroma and color of the ripe fruit, and to keep unimpaired in any climate. It excites the appetite, promotes digestion, and is pronounced, by connoisseurs, to be the finest condiment in the world. For medicinal purposes it recommends itself by its purity, strength and diffusible form.

Manufactured by E. McILHENNY,

NEW IBERIA, LA.

For Sale by all Wholesale Grocers.

CARNRICK'S SOLUBLE FOOD

IS UNLIKE ANY OTHER INFANT'S FOOD THAT HAS EVER BEEN PRODUCED.

℞

THE FORMULA.

Partially Predigested Milk Solids,	**45 parts.**
Wheat with the Starch converted into Dextrin,	**45 "**
Milk Sugar,	**10 "**

We do not claim this food to be "a **perfect** substitute for human milk." But we do claim that **Carnrick's Food approaches nearer to human milk in constituents and digestibility than any other food that has ever been produced**, and that it is the only infant's food that will, without the addition of cow's milk, thoroughly nurse a child from its birth.

We believe that **Carnrick's Food** solves the problem of a reliable substitute for human milk. The Caseine of cows' milk, by partial predigestion with freshly made Pancreatine, is rendered as easily digestible by the infant as human milk.

We have never published an analysis of **Carnrick's Food** "prepared with milk," for, unlike all other foods, it is prepared by the addition of water only, and we base our claim upon the intrinsic value of the food as compared with an equal amount of solid constituents of human milk. All other analyses or comparisons are misleading. We challenge similar comparisons with any other food, and confidently believe, that if **Carnrick's Food** is depended upon for the nutrition of infants, the great mortality among children will be reduced. Full information regarding the process of manufacture will be cheerfully furnished, and samples sent free to those who wish to test **Carnrick's Food.**

REED & CARNRICK, New York.

NATRONA BI-CARBONATE OF SODA.

(ABSOLUTELY PURE.)

NATRONA



TRADE MARK

SODA

The nature of the raw material from which NATRONA BI-CARBONATE OF SODA is made—viz., kryolith, a mineral containing *pure sodium*—insures a purity and uniformity of product which cannot be obtained from any other known material. In making BI-CARB. SODA from any other raw material, the use of sulphuric acid is a necessity, but none is used in any part of the process of making NATRONA BI-CARB.; hence its entire freedom from the slightest trace of arsenic, which is always present in ordinary soda. Its absolute purity and entire freedom from all traces of *sulphate of soda*, common salt and other impurities, render NATRONA BI-CARB. NEARLY TASTELESS, and being bolted through the finest bolting-cloth, insures the finest stage of division.

To these indisputable facts the attention of CONSUMERS of soda is specially called. They are IMPORTANT, and should influence both those who use and those who sell soda, to buy and sell NONE BUT THE BEST.

The NATRONA BI-CARB. Soda is kept in stock by almost every wholesale druggist and grocer throughout the United States, of whom it may be ordered.

Natrona Bi-Carb. Soda is unequaled by any other brand of English or American Manufacture.

PENNA. SALT MANUFACTURING CO.,

NATRONA CHEMICAL WORKS. PHILADELPHIA, PA.

THE LABORATORY.

To Inventors, Manufacturers and Applicants for Patents

The AMERICAN ANALYST may be consulted upon all matters involving theoretical or applied chemistry. Advice and opinions given. Analyses and assays made. Patents perfected and secured. Terms reasonable.

Address, AMERICAN ANALYST,
19 Park Place, N. Y.

ALTHENE SKIN SOAP

An absolutely pure and perfect soap for all purposes of the toilet, nursery, bath or sick-room. Has the approval of leading chemists and physicians, and is recommended by all who have used it. Price 25 cts. a cake, or 65 cts. for a box of three. Can be obtained of the retail druggists or from

J. W. CAMPION & CO., 916 Filbert Street,
PHILADELPHIA.



GOLD MEDAL, PARIS, 187[illegible]

BAKER'S

Breakfast Cocoa.

Warranted *absolutely pure Cocoa,* from which the excess of Oil has been removed. It has *three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup.* It is delicious, nourishing, strengthening, easily digested, and admirably adapted for invalids as well as for persons in health.

Sold by Grocers everywhere.

W. BAKER & CO., Dorchester, Mass.

Sura Cura

ROBINSON'S SURE CURE FOR

RHEUMATISM

And NEURALGIA,

And remedy for diseases arising from an impure state of the blood. An antidote for MALARIA. Price 50 c. and $1. Sent by mail on receipt of price. Send for Circular.

R. W. ROBINSON & SON,
184 Greenwich Street,
NEW YORK.

Sura Cura

ESTABLISHED 1823.

ALEX. YOUNG CO., Limited,

DISTILLERS OF

Y. P. M. WHISKIES.

DISTILLERY, - - - Nos. 408, 410, 412 and 414 South Street.
MALT HOUSE, - Nos. 416, 418, 420, 422 and 424 South Street.
STORE, - - - - - - - - - No. 700 Passyunk Avenue.

PHILADELPHIA, PA.

FOR SALE BY

ACKER, MERRALL & CONDIT, and PARK & TILFORD,

NEW YORK.

KEITH'S

CON. TINC. AVENA SATIVA

(FROM COMMON OATS.)

WITHOUT ADMIXTURE OF ANY KIND.

A Powerful Nerve Stimulant, Tonic, Etc.,

WAS FIRST offered to the medical profession by B. KEITH & Co., in 1881, as a remedy to be employed in the treatment of

Paralysis, Epilepsy, St. Vitus' Dance, the Morphia or Opium Habit, Chloral and Tobacco Habits, Sleeplessness, Nervous Debility and Exhaustion, Neuralgia, Alcoholism Painful and Deficient Menstruation, Headache, Hysteria, Impotency, Convulsions and Prostration from fainting, and in the Convalescent stage of all Acute Diseases.

DOSE.—From ten to thirty drops, or more, as often as may be indicated to meet the urgency of the case. Administer in hot water when quick action is desired.

AN OVERDOSE CAUSES PAIN AT BASE OF BRAIN.

—) WE MAKE ONE QUALITY ONLY (—

Price,
2 oz., 45c.; 4 oz., 75c.; 8 oz., $1.35; 16 oz., $2.50

B. KEITH & CO.,
75 William Street, N. Y.

GILBERT S. GRAVES

STANDARD

STARCH.

MANUFACTURED WITH ENTIRELY NEW MACHINERY AND BY LATEST IMPROVED PROCESS.

IT IS GUARANTEED to be fully equal to BRANDS SOLD AT FANCY PRICES, and MUCH SUPERIOR TO STARCH SOLD AT EQUAL PRICES.

THE MIRROR GLOSS

Is the finest Starch made for the Laundry, and cannot be excelled. It will not injure the finest Laces.

THE CORN STARCH

For culinary purposes is prepared with the greatest care, from selected Corn, and is a most delicious and wholesome article of food.

ASK YOUR GROCER FOR IT.

THE TORSION

Braided Wire Mattress.

At all times a thoroughly ventilated and perfectly clean mattress, it cannot absorb odors, or retain exhalations or disease germs.

D. HAYES AGNEW, M. D., Prof. of Surgery, University of Pennsylvania, says:

"The Torsion Braided Wire Pillow and Mattress I regard as superior to anything of the kind now in use; well suited for either private or hospital use.

Prof. WM. H. PANCOAST, late Professor of Anatomy, etc., in Jefferson Medical College, now Professor of Anatomy and Clinical Surgery in the Medico-Chirurgical College of Philadelphia Hospital Surgeons, says:

"I have used in my surgical practice your Braided Wire, in the form of mattresses, pillows for the head and body, and short pillows for the arm and leg when injured. I find them most admirable, cool and light, yet affording perfect and elastic support.
I have saved a patient from bed sores by the use of the Braided Wire mattress."

WM. H. FORD, President Board of Health, Philadelphia, says:

"I have used the Torsion Braided Wire Mattress with great satisfaction, it is light and therefore easily handled; it is elastic and very comfortable. The case can be easily removed to afford a complete airing, a feature of great importance from a health point of view.
It is an invention of great usefulness.

For descriptive circular and price list, send to

The Torsion Braided Wire Upholstering Company,

1017 CHESTNUT ST., PHILA.

"BILLET"

are

Carefully Selected

French Sardines,

Packed in Choicest Olive Oil.

AT ALL LEADING GROCERS.

Any Retail Druggist in the United States who desires to obtain Advertising Matter, Show Cards, Signs, etc., which will assist and instruct him in the sale of Harriet Hubbard Ayer's Recamier Toilet Preparations and Vita Nuova, should address THE RECAMIER MFG. Co., 52 and 54 Park Place, New York City.

UNEQUALLED Ask your Grocer for, and insist on having, LEA & PERRINS' Sauce, "The Worcestershire." It is known throughout the whole civilized world as the Best and most Delicious Sauce. DELICIOUS.

SCOTCH MARMALADE, Jams, Fruit and Wine, Jellies, &c.
By James Keiller & Son, Dundee.

SCOTCH BISCUITS, Albert, Water, and Oat Cake,
By Robert Middlemass & Son, Edinburgh.

RACAHOUT des Arabes, by De Langrenier, Paris.

BAY WATER, West India, (J. D. S. brand), in cases, one dozen bottles.
Sold by all first-class Grocers.

JOHN DUNCANS' SONS, 43 Park Place, New York. Agents for the United States.

Robert Gordon's
TRADE MARK.
SPICED · SEA · FOODS
(IN GLASS.)
OYSTERS, LITTLE NECK CLAMS, MUSSELL, SHRIMP, LOBSTER, Etc.,
Packed in 8 and 16 oz. Jars. Guaranteed to be strictly Pure.
MADE OF THE FINEST MATERIALS.
—ALSO,—
ROBERT GORDON'S CONDENSED CLAM CHOWDER,
In 3-lb Cans. Cheapest and Best in the Market.
MANUFACTURED BY
JONES, GORDON COMPANY, Limited,
204 West Street, New York.

A GOOD INCOME.

We have enabled several gentlemen and ladies to add largely to their incomes by paying them liberal commissions on subscriptions.

For further particulars, ADDRESS AMERICAN ANALYST,
19 Park Place, New York.

ESTABLISHED 1857.

J. H. CUTTER,

OLD

BOURBON AND RYE WHISKIES.

We are the Sole Owners and Proprietors of this Celebrated Brand of Whiskey.

C.P.MOORMAN & CO. LOUISVILLE, KY.

We Guarantee the Superior Quality and Absolute Purity of every Barrel of Whiskey sold by us under this Brand.

W. P. FESSENDEN, Agent for N. E. States, Maryland and Penn., 11 Central St., Boston.

Good Subscription Agents wanted by AMERICAN ANALYST.

PEACOCK'S BROMIDES

(SYR: BROM: COMP: PEACOCK)

NERVE SEDATIVE.

Each fluid drachm represents 15 grains of the Combined C. P. Bromides of Potassium, Sodium, Calcium, Ammonium and Lithium.

USES:—EPILEPSY, and all CONGESTIVE, CONVULSIVE, and REFLEX NEUROSES.

This preparation has stood the test of time and experience, and can be relied upon to produce results, which can not be obtained from the use of commercial bromide substitutes.

DOSE:—One to two FLUID drachms, in WATER, three or more times a day.

PEACOCK CHEMICAL CO., St. Louis.

CARL L. JENSEN'S
CRYSTAL PEPSIN TABLETS

FOR DYSPEPSIA OR INDIGESTION.



CARL L. JENSEN'S CRYSTAL PEPSIN has been known throughout the world for the last ten years among the medical profession only. But a medical preparation of such high value as this could not be kept exclusively within the power of the physicians without permitting the public to become familiar with CARL L. JENSEN'S CRYSTAL PEPSIN, which they have so often seen mentioned in prescriptions from their physicians, and from which preparations they have received such gratifying results. That the public have availed themselves of this knowledge is manifested from the fact that the demand at the drug stores of late for CARL L. JENSEN'S CRYSTAL PEPSIN has become so urgent that we have been repeatedly requested by the Druggists at large to put up the PEPSIN in a more convenient form for their customers who demand JENSEN'S CRYSTAL PEPSIN without bringing a prescription. This PEPSIN, to suit the prescription department, is put up in loose Crystals or Scales, and therefore not in a suitable manner to be handled by the public. It is therefore, for the convenience of the public, prepared in tablet form, of which one or two constitute a dose, and put up in small bottles of convenient form to be carried in the pocket, each bottle containing seventy-five tablets.

CARL L. JENSEN,

SOLE MANUFACTURER,

2039 Green Street, Philadelphia, and 161 West 23d Street, New York.

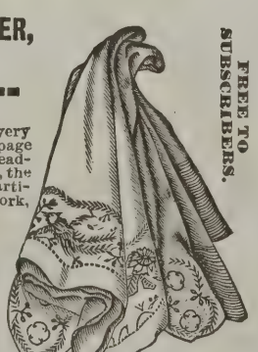
KEPT BY ALL DRUGGISTS.

ESTABLISHED 1841.



THE GREAT AMERICAN STORY PAPER,
—THE—
---YANKEE BLADE---

This wonderful family story paper is read every week by 400,000 people. It is a large, eight-page paper, every page filled solid full of interesting reading; stories of thrilling interest, adventure, love, the sea, detective tales, fireside stories, etc. Special articles on the Household Department, Ladies' Work, Boys' and Girls' Departments. The Famous Funny Columns of THE YANKEE BLADE are edited by SAM WALTER FOSS, the celebrated humorist. The circulation is rapidly increasing. Endorsed by the best people as suitable for everybody to read. Its reading matter is pure, and devoid of the slightest tinge of vulgarity. Don't fail to try THE YANKEE BLADE. You will be delighted with it. Comes every week. Our regular subscription price is $2.00 per year. **We offer it to new subscribers for only $1.00 a year, or 50 cents for six months.** We will send it three months for 25 cents. **If you will enclose 6 cts. extra, and mention this paper, we will send you FREE a Half Dozen Japanese Shifu Handkerchiefs** of Mikado paper, fibre silk, nearly half a yard square, in handsome designs, assorted. This is one of the greatest offers ever made by any reliable firm. Send at once. **Sent 2 years for $1.75.** THE YANKEE BLADE is for sale at all newsdealers, for 5c. per copy.



FREE TO SUBSCRIBERS.



POTTER & POTTER, Pubs. Yankee Blade, Boston, Mass.

We have examined the above-named paper and Japanese handkerchiefs, and find them to be a remarkable bargain. We can recommend them to all our readers.—Editor.

FOR THE ILL-EFFECTS
— OF —
Summer Heat, Heat Exhaustion.

Where after a prolonged exposure to a heated atmosphere you feel exhausted, depressed and tired mentally as well as physically, take a dessert spoonful of Bromo-Soda in half a glass of water, and drink while effervescing, when relief will be sure to follow.



A Cure for Sick Headache, Sleeplessness, Etc.

ASK FOR BROMO-SODA and TAKE NO SUBSTITUTE.

J. HENRY HENTZ. J. P. ROBINETT. J. HENRY HENTZ, Jr.

ESTABLISHED 1793.

WHITE, HENTZ & CO.,

SOLE PROPRIETORS OF

Trimble and Pennsylvania Monogram Whiskies.

222 and 224 NORTH SECOND ST., PHILADELPHIA.

D. LIEBER, 17 South William St., New York. Col. H. A. SELIGSON, 1200 Pennsylvania Ave., Washington, D. C.

POLICE DEPARTMENT,

CITY OF NEW YORK.

MESSRS. ADAMS & SONS:

It gives me pleasure to add my testimonial, in behalf of your "TUTTI FRUTTI" CHEWING GUM, to your collection.

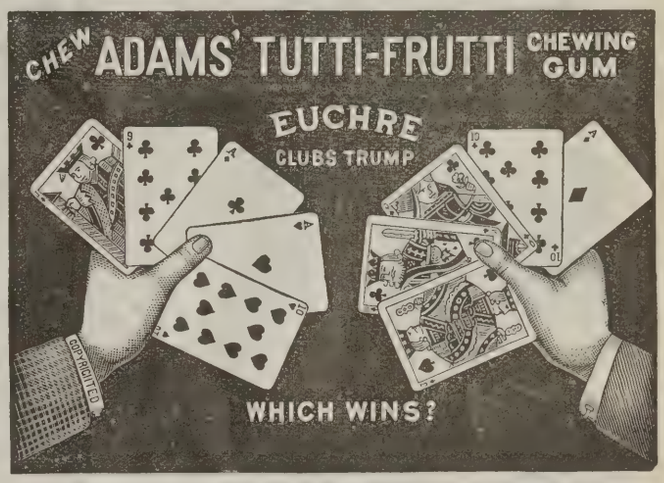
Superintendent Murray and myself were *recommended by Dr. CYRUS EDSON to try your Gum for a form of indigestion* from which we were suffering. At first it seemed to us a ridiculous remedy, but I am happy to say that its effects thoroughly justified the Doctor's recommendation.

I would add that I have rarely taken a more pleasant medicine.

Yours, very truly,

HENRY V. STEERS,

Inspector of Police.



GOLD. You can live at home and make more money at work for us than at anything else in the world. Either sex; all ages. Costly outfit FREE. Terms FREE. Address, TRUE & CO., Augusta, Maine.

TO ADVERTISERS!

FOR a check for $20 we will print a ten-line advertisement in One Million issues of leading American Newspapers and complete the work within ten days. This is at the rate of only one-fifth of a cent a line, for 1,000 Circulation! The advertisement will appear in but a single issue of any paper, and consequently will be placed before One Million different newspaper purchasers; or FIVE MILLION READERS, if it is true, as is sometimes stated, that every newspaper is looked at by five persons on an average. Ten lines will accommodate about 75 words. Address with copy of Adv. and check, or send 30 cents for Book of 256 pages.
GEO. P. ROWELL & CO., 10 SPRUCE ST., NEW YORK.

We have just issued a new edition of our Book called "Newspaper Advertising." It has 256 pages, and among its contents may be named the following Lists and Catalogues of Newspapers:—

DAILY NEWSPAPERS IN NEW YORK CITY, with their Advertising Rates.

DAILY NEWSPAPERS IN CITIES HAVING more than 150,000 population, omitting all but the best.

DAILY NEWSPAPERS IN CITIES HAVING more than 20,000 population, omitting all but the best.

A SMALL LIST OF NEWSPAPERS IN which to advertise every section of the country: being a choice selection made up with great care, guided by long experience.

ONE NEWSPAPER IN A STATE. The best one for an advertiser to use if he will use but one.

BARGAINS IN ADVERTISING IN DAILY Newspapers in many principal cities and towns, a List which offers peculiar inducements to some advertisers.

LARGEST CIRCULATIONS. A complete list of all American papers issuing regularly more than 25,000 copies.

THE BEST LIST OF LOCAL NEWSPAPERS, covering every town of over 5,000 population and every important county seat.

SELECT LIST OF LOCAL NEWSPAPERS, in which advertisements are inserted at half price.

5,472 VILLAGE NEWSPAPERS, in which advertisements are inserted for $42.15 a line and appear in the whole lot—one-half of all the American Weeklies

Book sent to any address for THIRTY CENTS.

THE FINEST MADE
COLBURN'S
PHILADELPHIA
MUSTARD
KING OF CONDIMENTS

OPIUM AND LIQUOR HABIT CURED.

WE solicit an investigation of our system and methods, and will gladly send to any one very interesting matter on the OPIUM HABIT DRUNKENNESS and their effects and cure. Physicians specially invited to examine, and if desirous of trying our remedies, liberal arrangements will be made with them

THE LESLIE E. KEELEY CO., Dwight, Illinois.

ESTERBROOK'S STEEL PENS

Leading Numbers 14,048,128 130, 135, 333, 161.

ESTERBROOK & Co. FALCON PEN

—For sale by all stationers.—

THE ESTERBROOK STEEL PEN CO., 26 John St., N. Y.
WORKS · CAMDEN, N. J.



These Goods are "Par Excellence,"

Pure, Healthful and Reliable, warranted to give satisfaction in every particular. For sale by wholesale and retail grocers throughout the United States. VOUWIE BROS., Manufacturers. CLEVELAND and CHICAGO.

A BUSINESS BENEFIT.

ADVANTAGES TO ADVERTISERS OFFERED BY THE AMERICAN ANALYST.

It has not the limitations of a daily paper. No one reads yesterday's paper. A monthly lives at least a month, while a semi-monthly is fresh twice a month, and its audience is not limited by geographical lines, but the circulation is all over the United States and Canada.

It contains matters of interest to everyone, especially the ladies of the household, and is, therefore, sure of a careful perusal. Our audiences are intelligent and of the better classes, who have money to spend, and any well worded advertisement in our columns, giving real information, will receive a careful perusal.

Our rates are as low as our circulation affords. Large circulation and original matter cost money, and those advertisers who desire to realize these benefits must expect to pay reasonably for them.

Advertisements in our columns are permanent. Most of our subscribers bind their numbers.

Our advertisements are set up in an attractive form, sure to call the attention of the reader.

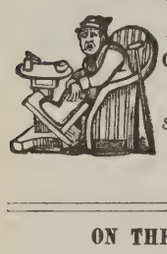
Anything that our readers want, or for which a demand is to be created, not wholly of a local nature, will pay to advertise with us.

We take only advertisements from legitimate houses of really meritorious goods, and give them all the editorial assistance they deserve; consequently our readers knowing this, have confidence in advertisements contained in our columns.

The fact that we have the best and largest houses in every branch of trade advertising with us, and that they always renew as their seasons arrive, proves beyond a doubt that they have found the AMERICAN ANALYST a good advertising medium. Why should not you?

CALIFORNIA
Fine Table Wines
From our Celebrated Orleans' Vineyard.
Arpad Haraszthy & Co
Producers of the
ECLIPSE
CHAMPAGNE,
530 Washington St.
SAN FRANCISCO.
PARK & TILFORD. New York, C. JEVNE & CO., - - Chicago, } Agents.


FACIAL BLEMISHES.
the Largest Establishment in the World for their Treatment. Facial Development, Hair and Scalp, Superfluous Hair, Birth Marks, Moles, Warts, Moth, Freckles, Wrinkles, Red Nose, Acne, Pimples, Bl'k Heads, Scars, Pitting, etc., and their treatment. Send 10c. for book of 50 pages, 4th edition.
Dr. JOHN H. WOODBURY,
37 North Pearl St., Albany, N. Y.
Established 1870. Inventor of Facial Appliances, Springs, etc. Six Parlors.


BLAIR'S PILLS
Great English Remedy for Gout, Rheumatism and Kidney Complaints.
Sure, Prompt and Effective. Oval box 34, round box 14 pills.
At all druggists, and 224 William St., New York.

HORTON, CATO & CO.'S


"ROYAL" SALAD DRESSING.
The best prepared Dressing, always fresh, does not turn oil, rancid or decompose as other dressings of a similar nature.
"ROYAL" WORCESTERSHIRE SAUCE,
The Peer of American Product.
HORTON, CATO & CO.,
SOLE PROPRIETORS AND MANUFACTURERS,
DETROIT, MICH.

A RICH PRESENT FOR YOU! We have purchased for one-fourth the original actual cost, a large quantity of elegant Papeteries, each one filled with the very choicest quality of Fashionable Linen Note Paper and Envelopes, in beautiful assorted tints, with pens, penholder, sealing wax, etc., to match. The regular retail price of some of these Papeteries is $3.00, others are worth $1.50 to $2.50 each, while the cheapest one has never been sold at less than 60 cents, and a great bargain at that price. They are all very handsome and really valuable. We shall, for the next two months, send one of these Papeteries, carefully packed and fully post-paid, to every one who sends us ONLY ONE DOLLAR to pay for a full year's subscription to DRAKE'S MAGAZINE. The best Papeteries will be sent to those who subscribe first, and it will be "First come best served." All subscriptions will begin with the latest number out. DRAKE'S MAGAZINE is 64 pages and handsomely bound, each number is complete in itself, and has from 15 to 25 handsome illustrations. It has special departments to interest ladies and children, and entertaining matter for everyone. Every article in it is written expressly for it by the best authors. No other magazine of equal value is sold at less than 20 cents per copy, or $2.00 per year, yet we will send you DRAKE'S MAGAZINE a whole year and a BEAUTIFUL PAPETERIE filled with fashionable Stationery, all for One Dollar. A one dollar bill will go safely in the mails. Cut this advertisement out. It may not appear again. Address, DRAKE'S MAGAZINE.
31 Mercantile Exchange, New York City.

MALTED MILK
THE ONLY FOOD
For Infants and Invalids
THAT CONTAINS ALL THE ELEMENTS OF NUTRITION, WITHOUT A SINGLE ADDITION.
MALTED MILK does not have to be cooked.
MALTED MILK needs no addition of milk, only to be stirred up with water, which can be done without the slightest fuss or trouble.
MALTED MILK will not spoil in hot weather.
MALTED MILK is always ready for immediate use night or day, when traveling or at home.
MALTED MILK does away with the danger of using sour or impure milk.
MALTED MILK is free from starch and cane sugar All foods that have to be cooked contain starch.
Ask your physician his opinion of MALTED MILK he knows all about it.
Price, . . . 50 Cts. | Large Size, . $1.00
Extra Large Glass Jars for hospital and family use, ... $3.75
These contain five times the quantity of the $1.00 bottles.
A sample bottle will be sent free to any Mother or Invalid sending their address to
MALTED MILK CO.
RACINE, WISCONSIN, U. S. A.

ON THE USE OF PURGATIVES.

BY CHARLES A. HOFF, M. D., ST. LOUIS, MO.

Of all preparations contained within the *pharmacopœia,* there are none, apparently, held in higher esteem by mankind than that class of medicines, commonly known as purgatives. The busy practitioner confidently prescribes them with variable frequency, singly and combined, from the date of the writing of his very first prescription to that of his last; and the corner druggist rarely sees a day pass over his head on which he does not greet the customer who has called around to get "something to act upon his bowels." Indeed, the inevitable purgative awaits the tiny baby screaming in its first attack of colic; it is resorted to by the invalid weighted down with years of suffering and disease; and it is by no means despised by the individual in robust health, when assailed by the various petty ills, which even the most vigorous seldom entirely escape.

Notwithstanding the fact that purgatives are so generally prescribed by the physician, and so frequently resorted to without advice by the patient, they are not altogether incapable of doing harm. As everybody knows, the habit of purging the system repeatedly with salines, cholagogues, hydragogues, or drastics, is a most pernicious one; and the physician who fails to exercise a proper care, both in the selection and the administration of cathartics will sooner or later bankrupt the health of his patients as well as his own hard earned reputation.

Constipation is a complication of so many disorders, a symptom of so many diseases that its treatment in different cases depends upon very different considerations. For a simple, ordinary attack, the average doctor has been accustomed to use a simple purge, such as castor oil, sulphate of magnesia, rhubarb, senna, aloes, colocynth, blue pills, etc.; yet in none of these, can it be truly said, has there been found all that could be wished for, even in so simple a matter as a laxative. Where can we find the physician who has not been vexed and annoyed at the complaints of his patients against the purgative medicines he has been accustomed to prescribe. Some people there are who can not or will not swallow pills; many object to the nauseating castor oil; not a few oppose the use of salines since they are disagreeable both in taste and effect; many look upon all resinous cathartics as objectionable on account of their so called heating properties; aloes is objected to in pills and especially in pregnancy; elaterium is said to be excessively harsh and severe, croton oil is known to be dangerous; podophyllin causes an undue amount of griping; blue mass is avoided on general principles; and so on to the end of the chapter.

Fortunately, however, the physician of the present need no longer be placed in a dilemma when called upon to prescribe a preparation free from the faults enumerated in connection with ordinary purgatives. The pharmacist has bravely come to his aid with a formula of incomparable excellence; and this preparation, a combination of "manna, purified cathartic acid and fruit juice," although but recently brought to the notice of the medical world, is, nevertheless, already regarded as a most valuable addition to the resources of medicine.

The happy thought that suggested the combination known as the Rio Chemical Co.'s Acid Mannate justly challenges unlimited admiration and esteem, and has thus far evoked from the profession an almost universal verdict of commendation and praise. Prompt, mild and certain in its action, Acid Mannate may well be considered an ideal remedy in the constipation of pregnancy. Being pleasant to the taste, and continuing its good work without increased dosage, it is pre-eminently adapted to cases of habitual constipation. Indeed, in its wide range of adaptability as an aperient medicine it is impossible to exaggerate its importance, or allude either directly or indirectly to the vast variety of its beneficial, therapeutical properties.

The importance of laxatives is probably nowhere appreciated so much as in the constipation of pregnancy; and it is to this fact, no doubt, more than to any other, that Acid Mannate owes its great popularity and fame among remedial agents. The testimony of thousands of honorable medical gentlemen leading us to believe that, through the beneficent effect of this same elegant formula, constipation need not hereafter, as in the past, be regarded as one of the most troublesome attendants upon gestation. Moreover, the atrocious female pill of unknown composition but of dire effect, which has deluged the drug market for ages, we may consider as having had its day; and it is to be hoped that, since the physician is now in possession of a purgative especially suited to the period of gestation, female life will be less frequently harassed by the ails and aches said to be peculiar to the sex; and that miscarriages, displacements, granular erosions, congestions, headaches, dyspeptic and hypochondriacal attacks, and the whole long train of aches, pains and nervous ills will grow less familiar to the medical profession in the same ratio that the physician increases his familiarity with the actions of Acid Mannate.

A full sized bottle of Acid Mannate will be sent free to any Physician who desires to test it, if he will pay the express charges and mention this Journal, on application to the

RIO CHEMICAL CO.,
St. Louis, Mo

ARMOUR & CO.

CHICAGO, ILLS.

PACKERS OF

Pork and Beef Products

CANNED MEATS,

ETC.,

FOR HOME CONSUMPTION AND FOR EXPORT

TO ALL PARTS OF THE WORLD.

Also,

SHIPPERS OF

Choice Dressed Beef,

MUTTON AND HOGS,

In Refrigerator Cars,

To BOSTON,

NEW YORK,

PHILADELPHIA,

BALTIMORE,

And other cities throughout the country.

GREENWAY'S PORTER

—AND—

DOUBLE AND EXTRA DOUBLE STOUT.

GREENWAY'S SALE.
INDIA PALE ALE.
IN GLASS OR WOOD
AMERICAN
TRADE MARK.
SEND FOR CIRCULARS.
FULLY EQUAL TO THE BEST IMPORTED.
FOR FAMILY OR CLUB USE.
RECOMMENDED BY OUR BEST PHYSICIANS
FOR SALE BY ALL FIRST CLASS GROCERS AND DEALERS.
THE GREENWAY BREWING CO.
SYRACUSE, N.Y.

Greenway Bottling Co.,

BOTTLERS OF

GREENWAY BREWING CO'S BRANDS OF ALE, PORTER, DOUBLE STOUT

—AND—

Germania Brewing Co's Standard Pale Crown Lager & Culmbacher.

N. Y. Depot, 31 Broadway.

Established in London, 1831.

DEAN'S PATENT

ARDENTER MUSTARD.

BEST IN THE WORLD.

WARRANTED ABSOLUTELY PURE.
PATENT OFFICE UNITED STATES OF AMERICA 1871
WARRANTED ABSOLUTELY PURE.

Ardenter Mustard Pellets

—FOR—

Dyspepsia and Indigestion.

UNIVERSALLY recommended and prescribed by physicians. The medicinal property are English mustard seed coated with pepsin and sugar. You will find it will relieve you after using two or three doses. It is very beneficial for Heartburn, Sour Stomach and Headache. They are a beautiful confection for children. Each bottle contains full directions.

W. G. DEAN & SON,

361 and 363 Washington Street, 84, 86 and 88 North Moore Street, New York.

—THE—

CHRISTIAN MOERLEIN

Brewing Co.,

CINCINNATI, U. S. A.,

Brewers of the far-famed

"NATIONAL" EXPORT

(The Queen of Beers)

LAGER.

Owing to its absolute purity, beautiful pale color, fine aroma and nutritious qualities, the above beer has become the PRIME FAVORITE in all the principal hotels and clubs, and in thousands of families throughout the West and South.

Pure LAGER BEER,

"IMPERIAL" and "CULMBACHER"

Brewed & Bottled SPECIALLY FOR HOTELS, CLUBS AND PRIVATE FAMILIES

BY

Beadleston & Woerz

291 W. 10th St. New York.

Orders by Postal Card promptly attended to.

H. CLAUSEN & SON

BREWING CO'S

CHAMPAGNE LAGER BEER,

ROYAL EXPORT LAGER,

EAST INDIA PALE ALE,

EXTRA AMERICAN STOUT.

Bottled for Family Use and Export by

PHŒNIX BOTTLING CO.

888 and 890 Second Avenue,

Bet. 47th and 48th Streets

NEW YORK.

Order from your Grocer, or direct from us.

FULL WEIGHT
PURE

DR. PRICE'S CREAM BAKING POWDER

MOST PERFECT MADE

Its superior excellence proven in millions of homes for more than a quarter of a century. It is used by the United States Government. Endorsed by the heads of the Great Universities as the Strongest, Purest, and most Healthful. Dr. Price's Cream Baking Powder does not contain Ammonia, Lime or Alum. Sold only in cans.

PRICE BAKING POWDER CO.
NEW YORK. CHICAGO, ST. LOUIS.

STERLING



BAKING POWDER

MADE FROM
99 50/100 PURE CREAM TARTAR.

This powder never varies. A marvel of purity, strength and wholesomeness. More economical than the ordinary kinds. SOLD ONLY IN CANS.

STERLING MANU'F'G CO.,
12 & 14 Spruce St., New York.

CLEVELAND'S

SUPERIOR

Baking Powder

Is made only of the purest grape cream of tartar, purest bicarbonate of soda, and a small portion of flour, and is warranted entirely free from alum, ammonia, the phosphates, terra alba, lime, and all the adulterants frequently found in ordinary baking powders. It always affords the most nutritious, the most healthful, and the most delicious food, and the purity of materials used in its manufacture, and the nicety of their combination, render it the strongest and most economical ever produced.

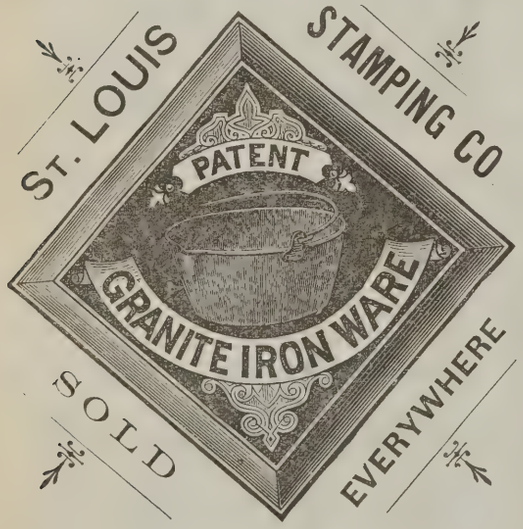
It is recommended for purity, efficiency and healthfulness by various state chemists, chemists of boards of health, and professors in institutions of learning throughout the country.

Sold only in tin cans.

CLEVELAND BROTHERS,

ALBANY, N. Y.

MANUFACTURED BY THE



N. K. FAIRBANK & CO'S

FAIRY SOAP.

A PERFECTLY PURE WHITE FLOATING SOAP.

DESIGNED EXPRESSLY TO USE IN TOILET, BATH AND NURSERY.

Admirably adapted to every requirement of the Household.

DAINTY AND DELICATE FOR ALL WASHING PURPOSES

For sale by all First-class Grocers and Druggists.

N. K. FAIRBANK & CO.,

CHICAGO, ST. LOUIS, NEW YORK, OMAHA.

ESTABLISHED 1872.

GELATINE.

JAMES CHALMER'S SON'S

Transparent Gelatine.

PURITY—STRENGTH.

Best for Family Use.
Jellies, Blanc Mange, Etc.

ACKNOWLEDGED BY EVERY ONE EQUAL TO THE BEST.



RUBY ROYAL "SEC."



This wine, of a bright crimson or Ruby color, possesses exceptional merit in all the characteristics of dryness, mellowness of flavor, and delicacy of fragrance. It is the only red champagne in the market, and can be tried at the Hoffman House, Delmonico's and other first-class places.

Sold by the Leading Grocers.

AGATE IRON WARE

Is the Purest, Cleanest, Most Durable, and altogether the Best Ware for family use ever made. It will not rust or break like ordinary Enamels, and is absolutely pure and safe to use, as certified to by the most eminent chemists here and abroad.



Two thousand different styles and sizes of Agate cooking utensils, for family use, are sold by all first-class dealers throughout the world, and giving universal satisfaction.

Subscriptions $1 per year. Now is the time to subscribe.

AMERICAN ANALYST

FOR THE

FAMILY AND CONSUMER.

A SEMI-MONTHLY ADVOCATE OF PURE FOOD AND THE SUPPRESSION OF ADULTERATION.

Office, 19 Park Place.

[Entered at the Post Office at New York, as Second Class Matter.]

VOL. IV.—NO. 16. NEW YORK, AUGUST 15, 1888. Whole No. 88

CONTENTS.

American Dairy 339
An Appetizing Dish 340
Answers to Correspondents 338
Artificial Flavors 340
Atmospheric Nitrogen 339
Butter and Lard 336
Business Notes 341
Domestic Dietetics 340
Editorial 338
Our Midsummer Greeting—The Growing Resources of the South—Prehistoric America—Keep up the Quality.
Hints for Emergencies 335
Infants' and Invalids' Foods 337
Mr. Harding's Past 333
Progress of the Period 339
Queer Drinks 339
School Architecture 339
Wine Maturity 339

MR. HARDING'S PAST.

Written for the AMERICAN ANALYST.

Mr. Alfred Harding opened his eyes reluctantly. Before opening them—before becoming aware that he was really thinking—he had balanced two necessities in his mind, and had decided in favor of the sterner and less agreeable of the two. He needed more sleep, and would have been delighted to get it. He needed to secure an appointment with the great publishing house of Printhard & Press, and in order to do so he had fifty miles to travel before ten o'clock. The latter necessity had been so firmly fixed in his mind the night before that he decided to get up before he really knew that he was awake.

Opening his eyes he became aware of a presence that surprised him mildly. If he had been broad-awake he might have rejected the evidence of his senses, and refused to acknowledge the existence of a something which he distinctly saw.

What this was he did not know, but he looked at it sleepily and wondered vaguely. First he wondered how it came there, and why it had come, and then he wondered what it was. This last wonder soon became strong enough to pull him into a sitting posture, and make him stare wildly.

The presence grinned and spoke. "You think you do not know me," It said. (Mr. Harding soon learned that It was entitled to the capital letter.) "But" It continued, "you will soon learn your error. Look in the glass."

This seemed preposterous. That a mere entity without any ostensible excuse for existence should manifest itself for an unknown purpose, and begin operations with such a command, was enough to produce a revolt immediately on the part of any man who had an opinion of himself. Mr. Harding rebelled.

It hardly seemed worth while to refuse to obey an order of so trivial a nature, so Mr. Harding simply lay down again, neither obeying, nor refusing to. He proposed to ignore it.

Almost immediately he was intensely irritated to find that he could not ignore it. He felt that he could refuse to look in the glass. That seemed easy, but to so refuse required a distinct effort of the will. He could not treat the command as a mere sound without meaning, which was what he at first intended. This annoyed him extremely, and he sat up again.

"What are you?" he said.

"Look in the glass," said It.

Mr. Harding arose slowly and reluctantly. Looking in his dressing glass he was at first aware of nothing unusual. He perceived the absolute necessity of shaving, and thought with a shudder, how tender his skin was. Then he noticed that his eyes were very red, and set about convincing himself that it was because he had not slept enough. He had almost done this when It spoke.

"No," said It, calmly. "That is because you drank and smoked too much last night,"

"What have you to say about it?" said Mr. Harding tartly without looking around. He was gradually becoming aware that he need not look around in order to see It, and he spoke directly at the mirror.

"Everything," said It. "Do you begin to find out who I am?"

"I do. God help me!" said Mr. Harding, for in the glass he saw, more and more distinctly each moment, a something which was, and which was not, himself. It was a nothing. It was something. It was, he knew not what, but it was himself. It was a memory. It was a voice. It was a disappointment. It was a mockery. And again and again the conviction came home to him that it was himself. He shrank from the thought, but he could not overcome it.

"It is I," said It. And a mocking laugh that had in it, something of infinite sorrow, rang through the room.

"And what, pray, are you?" asked Mr. Harding defiantly and yet almost despairingly.

"I am your past life," said It. "You have lived forty years and have never yet faced yourself. Do you not know that there must come to every man an hour—no matter how he may put it off—in which he must sit down face to face with himself and see clearly what manner of man he is? In that hour he can tell no lies to himself. That hour has come to you. You can, if you try, ignore me, and even forget me, but you have made me your master. If you choose to forget me you are my hopeless slave. If you choose to face me and know me for what I am you may if you like rise superior to me, but I don't mind telling you, Mr. Harding, that you'll have a hard time doing it, and I don't think its in you. You would have done much better to have made my acquaintance earlier, but an intelligent man, and you are intelligent, can't put this thing off any longer than his fortieth birthday."

Mr. Harding drew a long breath, but he said nothing. He looked at a calendar that hung on his wall and saw that it was indeed his birthday. Then he sighed and began to dress. This done, he breakfasted hastily, paying little attention to It, but uneasily conscious that he was not going to be able to ignore the presence.

It was not particularly obtrusive, and would from time to time leave Mr. Harding, when some other person would speak to him. It left him for a considerable time after Mr. Harding had taken the stiff "bracer" which he had accustomed himself to take before breakfast, and noticing this, he ordered another to be brought with his omelette. As he drank the second, however, It stood up in front of him and said: "I may go away for a little time, now, but you cannot drive me away in that manner. In fact I really inspired you to take what you knew would hurt you."

"Are you then my bitter enemy?" asked Mr. Harding, in consternation, for he began to realize that it was impossible to ignore his companion.

"N-no," said It, doubtfully. "You have injured me in many ways, and I am going to be revenged. You cannot escape from that. But, on the other hand I have been made happy at times by your good actions, and you are justified in appealing to those if you desire that I shall not revenge myself too bitterly. You will never enjoy my company much, but you may become reconciled to my shortcomings. You may, and probably will, become indifferent to me. I have prepared you for it, I have formed your character without you realizing the fact. But you are not the man that—

"Don't preach any more," said Mr. Harding, with a wicked and impatient word, and It vanished while he read the morning paper and drank his coffee.

Mr. Harding was a writer and a fairly good one. He was not a great man, though he had often blamed himself for not being one, and had produced some work which had led people to believe that he might be one. He was both selfish and generous, but his generosity was rather a form of self-indulgence than a virtue, and had weakened his performances without strengthening his character. His selfishness on the other hand was moral weakness rather than an active vice, and he was entirely capable of self-abnegation whenever he saw that the occasion demanded it. This had happened to him often, and if he had been a man of firmer grasp of thought, the discipline might have been valuable to him. As it was, he had generally suffered from reaction every time he had climbed a moral hill.

As he sat in the cars, riding towards the city, where he was to fill his engagement with Messrs. Printhard & Press, he lighted a cigar and set about studying It that rode with him.

It was an undersized person, as he saw when he came to look steadily, with some beauties and many defects of appearance. These he began to study as he had never before consciously studied any person, for his talent in sketching character came from intution and, casual observation, rather than analytical study.

"I could enjoy this very well," he said to himself "if It would not preach so confoundedly much."

But It would preach, and it must be confessed that the sermon was not a cheerful one.

LACTOPEPTINE,

The most important remedial agent ever presented to the Profession for Dyspepsia, Vomiting in Pregnancy, Cholera Infantum, Constipation, and all Diseases arising from imperfect nutrition.

Lactopeptine precisely represents in composition the natural digestive juices of the Stomach, Pancreas and Salivary Glands, and will, therefore, readily dissolve all foods necessary to the recuperation of the human organism.

CAUTION

We regret that we are compelled to caution the profession in prescribing Lactopeptine, but very careful investigation has proven to us clearly the necessity of it. Substitution of cheap and worthless compounds are being made in many cases where Lactopeptine is prescribed.

Lactopeptine is always UNIFORM, and its effects are SPECIFIC, and no one has ever been able to imitate its digestive value. If you do not obtain positive results when you prescribe Lactopeptine, you can be sure that some substitution has been made, and in such cases it may be necessary for the physician to prescribe Lactopeptine in the original ounce package to insure certainty of obtaining the genuine article. We can confidently make this assertion, knowing the scrupulous uniformity in digestive value of every ounce of Lactopeptine.

Lactopeptine has always been kept strictly in the hands of the Medical Profession, never having been admitted in any publications but Medical Journals. It is prescribed by the most intelligent and educated physicians in all parts of the world, and there are but few physicians who have ever used Lactopeptine that will not agree with the late Prof. L. P. Yandell, when he says: "Lactopeptine is one of the certainties in medicine, and in this respect ranks with Quinine."

In the various forms of Dyspepsia, in vomiting in Pregnancy, and in Mal-nutrition of children, there is no known remedy so positive in results.

P. O. Box 1574. THE NEW YORK PHARMACAL ASSOCIATION, NEW YORK.

"You are going to town," It said after a long diatribe on his follies and a discussion of one or two serious offences, for which he had often acknowledged his punishment had been inadequate. "You are going to town to complete an arrangement for what may be your greatest work. You can make it so, unless I stand in your way, for you are about at your best now. I have not injured you very seriously, and I have done much to prepare you for the work. It is one you can do, and it is a better chance than you ever had before for a considerable success. I tell you plainly, however, that unless you exert much more will-power than you have been in the habit of doing, I will spoil it."

MELLIN'S

TRADE MARK.

FOR INFANTS & INVALIDS.

FOOD

The Only Perfect Substitute for Mother's Milk.

A Copy of our Book,

The Care and Feeding of Infants

will be MAILED FREE to any address.

DOLIBER, GOODALE & CO.,
40-41-42-43 Central Wharf, Boston, Mass.

"You are a cheerful companion, certainly," muttered Mr. Harding.

"I am exactly what you have made me," retorted It.

"True enough," said Mr. Harding, with a sigh, "and it would have been better if I had taken more pains. It looks very much now as if I would be hereafter what you make of me."

"I will certainly have my revenge," said It, "but you can partially escape from my influence if you choose."

As he stepped from the car Mr. Harding ceased the conversation, though he was perfectly conscious that his companion was with him, and as he walked up Broadway towards the office of the publishing firm, nodding to some friends and stopping to speak to others, he became aware of a feeling of curiosity about each one of them. He wondered what acquaintance this one and that had with It, and once or twice was considerably annoyed when it struck him that some friend looked upon It as a rather undesirable companion. None of them spoke of this, however, and Mr. Harding tried to allay his annoyance by the thought that they did not themselves keep particularly good company. He failed, however, to extract much comfort from the thought.

Suddenly he saw across the street a friend with whom he had spent some of his happiest days. Their pleasures had not been dissipations in the grosser sense, but both were "Bohemians," to whom choice companionship was sweeter than toil, and as he recognized the well-loved face a subtle temptation came to him.

"It is too pleasant a day to give to business," It said. "Spend it with Royal. Printhard & Press can wait. They will not like it, but the publisher is your natural enemy, and you needn't care. To-morrow will do for them."

"Yes, you have said that many times before," said Mr. Harding, sorely tempted, but offering some resistance.

"What if I have?" It retorted. "Hasn't your life

STEVENSVILLE MILLS.

IMPEROYAL VACUUM COOKED **OATS.**

IMPEROYAL VACUUM COOKED **WHEAT.**

M. D. STEVENS'

SOLE MANUFACTURER OF

ABSOLUTE PURITY.



HOUSEHOLD NECESSITY.

ONE MINUTE IN PREPATATION.

IMPEROYAL VACUUM COOKED **HOMINY.**

IMPEROYAL GRIDDLE CAKE **FLOUR.**

Recommended by Eminent Physicians and Chemists.

☞Adapted to all kinds of Pastry, Bread, Biscuit, Griddle Cakes, etc., and its absolute purity and freedom from Alum, Terra Alba or any injurious ingredient, makes it a necessity in every household. No lady can afford to be without it. Sold by best Grocers.

M. D. STEVENS,
Room 18, Mercantile Exchange,
Cor. Hudson & Harrison Sts., NEW YORK.

THE DIPLOMA OF HONOR.

NESTLÉ'S FOOD IS

The only infant's food that has ever received 12 Diplomas of Honor.

The only *sound, safe, nutritious* food that is prepared with water alone.

The best safeguard against Summer Complaint and Cholera Infantum.

"The best of all foods for Infants."

See Ringer's Hand-Book of Therapeutics, 11th ed.

Send for Sample to THOS. LEEMING & CO., New York.

NO LOOSE BRISTLES!

NO BLEEDING GUMS!

PERFECTLY POLISHED TEETH!



Three Prominent New Orleans Dentists voice the opinion of their profession after thorough tests.

NEW ORLEANS, June 11th, 1888.

After satisfactory trial, I can safely say that the polish obtained from the Felt is superior to that which is obtained from the bristles. JAS. WEST, D.D.S.

I consider your brush an improvement on the old tooth brush. R. J. FRIEDERICHS.

I can cheerfully recommend it as being superior to any other in the market. I intend to recommend it to all my patrons. Respectfully, G. P. MALONEY, D.D.S.

First cost, **60 cents**, for holder and box of 18 Felt Polishers, latter need only be renewed, 25 cents per box; holder imperishable; at all dealers or mailed by HORSEY M'F'G CO., Utica, N. Y.

IMPORTANT

TO THE

MEDICAL PROFESSION.

Send your address to THE NEW YORK PHARMACEUTICAL COMPANY, BEDFORD SPRINGS, MASS., for Illustrative Hand-book, **FREE**, containing valuable formula, special directions, and the testimonials of one thousand physicians in favor of the great merits of

HAYDEN'S

Viburnum Compound,

IN FEMALE DISEASES.

Also, the

URIC SOLVENT,

For KIDNEY DISEASES, and complaints arising therefrom.

been brighter for the pleasures you have taken? You havn't suffered over much."

The end of it was that Mr. Harding yielded. His friend was idle and was delighted to meet him, and the day was spent in elegant idleness.

As they smoked the last cigar together in Royal Foster's rooms, Foster said, half laughing:

"There is something I want to tell you, Alf, though I suppose it is a breach of confidence, but because we are comrades I shall tell you. You know Tom Grainger has been very attentive to my cousin Alice for a year."

Harding nodded. He could not speak, for a sharp pain caught him as he heard the words.

"I thought you were going to marry Alice," continued Foster, "when you and she were so much together at Long Beach last summer, and I was surprised at your leaving the field to Tom."

Harding was still silent. That pain was almost unendurable.

"Well, Tom proposed last week," continued Foster, and he paused.

It seemed to Harding half an hour before he could command his voice sufficiently to ask, "When are they to be married?"

"She refused him," said Foster, quietly. "She loves another man."

The room was full of music and light now. Both men felt that they had broken boundaries, but each knew that the other's honor had sealed the secret.

Harding would have spoken, but as he opened his mouth It stepped before him, *monstrum horrendum*, and cast a hideous shadow in his eyes.

"I forbid it," It said, and Harding was silent.

"Next day he called on the publishers. "I am sorry," said Mr. Printhard, with dignified hypocrisy, "but as you did not call yesterday according to your engagement, we have engaged Mr. Writewell to do the work."

"Very well," said Mr. Harding, quietly, and he took his leave and started for home without more words.

That night he sat late with It, saying nothing while It reproached him bitterly.

"At length he spoke slowly. "I have made you what you are," he said. "You have said so and it is true. You are a poor creature, unworthy of me—unworthy of any man; yet you shall do me great good."

"What can I do?" said It, humbly and very sorrowfully.

"You shall show me your faults, and you shall remind me of what you have done, and, more than that, what you might have done. Miserable thing that you are, I will not submit to your commands—but I will take your advice. You shall not be my master, nor companion, but my servant."

And as he lay down tenderly, for the last time, with It, his pillow was wet with tears, but It had lost the mastery. DAVID A. CURTIS.

HINTS FOR EMERGENCIES.

WHAT TO DO IN TIMES OF SUDDEN NEED.

Antidotes for poison are familiar in almost every household. The following, furnished by a physician connected with the Board of Health of this city, are directions for resuscitating persons who from the several causes indicated have fallen into insensibility:

One of the most frequent things found in connection with cases requiring immediate action is insensibility. It is caused by injuries to or diseases of the brain, blood poisoning or poisoning by narcotics, and is oftentimes mistaken, especially by the police, for drunkenness. In these cases note the position of the body. Place the body on the back, incline the head to one side, extend the legs and place arms at the side. Compare two sides of body. Note condition of the pulse, whether strong or weak, and the state of the ribs and collar bones. Examine the head for wounds, bruises, swellings or depressions. Open the eyes and see if the eyeballs are sensitive to the touch, and if the pupils become small when exposed to the light, whether they are large or small and of the same size. Observe whether the breathing is difficult or easy, the presence or absence of stertor and the odor of the breath. Drunkenness can be detected by odor of the breath. Insensibility is usually incomplete. Both sides of the body are equally helpless. There is no stertorous breathing. The pupils of the eyes are usually dilated and equal in size, and the eyeballs are sensitive to touch. For this trouble cold water is the best remedy, and if you can get it a little hartshorn, which must be put to the patient's nostrils, and a few drops in water to drink.

In apoplexy the patient becomes suddenly insensible. The face is either flushed or very pale. The pupils of the eyes are fixed and dilated. The pulse is slow and labored, and stertorous breathing is noticeable. Convulsions also occur. In such cases place the body in a reclining position, and raise the head. Undo the clothing around the neck and apply cold water or ice to the head.

Epilepsy differs from apoplexy in that the patient foams at the mouth, is only partially insensible, bites the tongue, and the breathing and pulse are normal. All that can be done in these cases is to keep the patient from injuring himself.

Hemorrhage from the ear, mouth, nose or eyes indicates a fracture of base of skull. Treat these cases as those of apoplexy.

Blows or falls on the head produce concussion of the brain, and are detected by external bruises, a confusion of ideas, sickness, fainting and stupor. In such cases place the patient on his back in a dark place, slightly raise his head, and apply warmth to his extremities and surface of the body.

Shock or collapse follows injuries to nervous system, fright, grief and lightning. The patient's breathing is very feeble, pulse almost imperceptible, eyes dull, face pinched and pale. Apply warmth to the surface of the body and extremities, give stimulants in small quantities, remove all tightly fitting clothing, and aid the restoration of circulation after placing the patient in a horizontal position.

Stupor, contracted pupils, progressive insensibility, indicate poisoning by narcotics. Prevalent for these

The Standard of Excellence.

KINGSFORD'S

OSWEGO

Pure and Silver Gloss



STARCH

KINGSFORD'S

OSWEGO CORN STARCH

FOR

Puddings, Custards, Blanc-Mange, Etc.

THE PERFECTION OF QUALITY.

WILL PLEASE YOU EVERY TIME.

Always ask your Grocer for these goods.

COLDEN'S LIQUID BEEF TONIC.

ORIGINAL LABEL:
"Colden's Liebig's Liquid Extract of Beef and Tonic Invigorator."

AN INVALUABLE AID IN THE TREATMENT OF ALL CASES OF DEBILITY.

Established 15 Years. Endorsed by Scores of Physicians. Essentially Different from all other Beef Tonics. Beware of Imitations.

COLDEN'S LIQUID BEEF TONIC consists of the Extract of Beef (by Baron Liebig's process), spirit rendered non-injurious to the most delicate stomach by extraction of Fusel Oil, soluble Citrate of Iron, Cinchona, Gentian and simple aromatics. An official analysis of this preparation by the eminent chemist ARTHUR HILL HASSALL, M. D., F. R. S., and an endorsement by SIR ERASMUS WILSON, F. R. S., is printed on the label of each bottle.

Its Range of Action Embraces all Cases of Debility.

By the urgent request of several eminent members of the medical profession, I have added to each wineglassful of this preparation two grains of SOLUBLE CITRATE OF IRON, and which is designated on the label as "No. 1," while the same preparation, without Iron, is designated on the label as "No 2."

It acts directly on the sentient gastric nerves, stimulating the follicles to secretion and gives to weakened individuals that first pre-requisite to an improvement, an appetite.

☞ *I will, upon application, send a sample bottle of* ***Colden's Liquid Beef Tonic*** *to any physician in regular standing. Please ask your Dispensing Druggist (if he has not already a supply) to order it. In prescribing this preparation physicians should be particular to mention "COLDEN'S" viz; "EXT. CARNIS. FL. COMP. (COLDEN). It is put up in pint bottles and can be had of Wholesale and Retail Druggists generally throughout the United States.*

C. N. CRITTENTON, Sole Agent,

115 Fulton Street, N. Y.

Please Mention the AMERICAN ANALYST.

cases is cold water to the head and chest. Give emetics, strong coffee and exercise.

To restore the apparently drowned, place the patient face downward, bestride the body, grip the clothing over the shoulders. If the body is naked, thrust your finger into the armpits, clasping your thumbs over the shoulders, raise the chest as high as you can without lifting the head from the ground, and hold it long enough to count four. Then let the body rest on the ground, the forehead on the flexed arm, the neck straight, the mouth and nose free. Place your elbows just inside of your knees, and your hands on the sides of the chest just over the lower ribs. Then press downward and inward long enough to count two. Suddenly let go your grasp on the shoulders and raise the chest as before. Repeat these movements alternately ten or fifteen times a minute until natural breathing begins; then induce circulation and warmth by rubbing the extremities and covering the patient with dry blankets and clothing. Hot water, heated bricks or hot bottles at the pit of the stomach, arm pits, soles of feet and inside the thighs will help matters along. Small quantities of wine, coffee or warm water are of great use when his power of swallowing has returned. Sleep should be encouraged, and mustard plasters to the chest and under the shoulders will relieve distressed breathing.

You can always tell sunstroke or heatstroke, for one need not be exposed to the sun's rays to cause this malady. Being in a heated atmosphere is enough. As a rule, these cases are preceded by headache, sickness at stomach and weakness of the knees. The face and head are hot, the pulse full but weak, and the breathing slow and labored. The face is red and sometimes purple. Put the patient in a cool place, apply ice or ice water to the spine, head and the back of the neck.

If the case is rather one of exhaustion, which can be told by a face not much flushed or pale, pulse frequent and feeble, and no difficulty in breathing, give stimulants gradually and be sparing of the ice.

In cases of hanging and suffocation by gas undo the patient's clothing, clear out his mouth and nostrils, dash cold water on his neck and chest, and induce respiration as in drowning cases.

In cases of hemorrhage pressure should be applied upon an artery between the wound and the heart, and continued until medical aid is summoned.

BUTTER AND LARD.

SOME OF THE FRAUDS OF THE DAIRY AND REFINER.

If the restrictions upon oleomargarine are justly imposed, there would seem to be an equal requirement for laws of corresponding stringency to prevent such frauds as are described in the following extract from a daily paper. These frauds are perpetrated daily by the very men who are loudest in their outcry against "bullbutter," and who insist upon the public condemning all artificial butter honestly made. Their motive is obvious.

In a dark and dingy looking cellar, belonging to one of the large produce commission houses on the west side down-town, two men were busily employed yesterday afternoon, in "fixing" numerous tubs of butter for the retail trade. A *Herald* reporter watched the operation with interest. The house in question does a large retail trade up-town, and the mode of "fixing" these tubs preparatory to leaving the down-town establishment may perhaps explain why it is that the uptown consumer pays thirty-five cents a pound for "gilt edge creamery" while the market quotation for the same is but twenty cents. After viewing the operation for some time and asking a number of questions, the reporter elicited the following facts, which may be said to apply not only to this house alone, but to most of the wholesale houses connected with the trade. John Smith, of Butterville, Ohio, for instance, will consign a number of tubs of butter to a New York house to be sold on commission. The butter is ordinary dairy butter—any sort of butter for that matter—and the market price the day the butter is received is, say eighteen cents. As this lot happens to be dairy butter, Mr. Smith, of Ohio, is credited on the books of the concern with the sale of so many pounds of butter at the ruling market rate. Now comes the transformation scene. All the marks on the tubs are carefully scraped off and the butter weighed. Say the first tub weighs sixty-five pounds net—that is, with due allowance made for the weight of tub, etc. The top is then knocked off and the butter "tried" to see what sort of a "brand" it will stand. Then as much salt or brine as the tub will possibly hold is packed on top of the butter. This is the first step. A new top is then nailed on, this cover, by the way, having been soaked and being therefore much heavier than the first one, and the tub is now ready for marking or branding. Here are a few imaginary brands for which stencils have been prepared:—"Silver Stream Creamery;" "Rocky Spring Creamery, warranted gilt edge;" "Fine Mountain Brook Dairy," and so on. Now comes the weighing process. The tub thus metamorphosed, with the addition of several pounds of salt and as many nails as can safely be driven in, is found to weigh seventy-three pounds. Its original weight was sixty-five pounds. This seventy-three pounds of "Silver Stream Creamery" then, is sold for say twenty-two cents, yielding a net profit to the "commission house" of $4.36, which, on one tub of butter alone, may be considered a handsome profit. Sometimes the housewife who buys this "'Silver Stream Creamery," at thirty-five cents per pound raises a complaint at the quality of the butter. The reply usually is: "Well, madam, this is genuine 'Silver Stream Creamery,' and it certainly ought to be good,' and then madam goes away with the reflection that "perhaps it was the weather after all." Madam might have another idea on the subject if she but knew that most of these flowery named creameries had an existence only in dark and dingy cellars down-town.

About lard the matter is still worse. The New York manufactures referred to in the following extract have been hounding Congress to pass prohibitory laws against oleo lard, while they are themselves making a worse chemical compound. The italics are ours and contain the meat in this nut.

More than $40,000,000 of American refined lard is exported every year. Lard ranks sixth in value out of $800,000,000 of American exports. It is exceeded only by cotton, breadstuffs, petroleum, tobacco and bacon. The American lard, especially that part of it that is made in New York city, has been the recipient of medals and prizes for its excellence, earned principally for uniformity of color and body, sweetness and superiority of preparation for exportation. It is said that two-thirds of the entire shipment—nearly two million tierces—are made in this city and exported to foreign lands. The foreign demand gradually increases year by year and the home consumption constantly grows. The several refineries in this city are erected on a very extensive scale and employ more than a thousand hands. These works are completely provided with modern machinery, of which many of the refiners are the inventors and owners. The crude material, which daily arrives, undergoes a most rigid inspection, and any portion of it that fails to come up to the required standard of taste, color and consistency, is condemned and quickly removed. The approved stock is then turned into enormous iron kettles, some of which have a capacity of 100,000 pounds. The kettles being filled, sufficient heat is applied until the mass is thoroughly cooked, after which it is transferred to coolers. *At this stage of the process, certain methods peculiar to the refiners in this city, and which are carefully guarded as a trade secret, are applied. They render the lard white, pure and uniform in texture and quality.* The next process is to have it run through the pipes into large tanks placed in the cellar immediately underneath the coolers. From there it is drawn off into receptacles varying in capacity from one pound tin cans up to 320 pounds. All the packages, when filled, are carefully cleansed of all outside drip occasioned by the filling process. They are then put on the scale and the correct weight is ascertained, after which they are branded and the smaller sizes, ranging from one pound up to five pounds, are packed in wooden cases ready for shipment. It is asserted that there is not a country in the world to which the refined lard manufactured in New York does not go. Certainly there is not a commercial city in continental Europe in which its price is not specifically quoted on the exchange daily, and the manufacturers assert, with a large degree of pride and satisfaction, that there is not an instance known of a shipment having been defective in quality or short in weight or below the standard. The dealers report the outlook for the coming season as very satisfactory.

BURNETT'S
PERFECTLY PURE HIGHLY CONCENTRATED
Standard Flavoring
EXTRACTS

THE superiority of these Extracts consists in their
PERFECT PURITY AND GREAT STRENGTH.

There is no subject which should more engross attention than the purity of the preparations which are used in flavoring the various compounds prepared for the human stomach.

They are not only true to their names, but are prepared from fruits of the best quality, and so highly concentrated that a small quantity only need be used.

JOSEPH BURNETT & CO., Boston, Mass.



ALTHEA.

The greatest hygienic face stimulant. Is the grandest preparation for the complexion ever discovered.

PRICE, $1.00 PER BOTTLE.

MANUFACTURED BY THE
ALTHEA COMPANY
25 West 125th St., N. Y.

Ask your druggist for it, or send direct to us.

"ROYAL POLISH"



The Most Reliable Dressing
FOR
Ladies' and Children's Shoes.

It is the BLACKEST.
It COATS the Leather the LEAST.
Does NOT INJURE the Finest Kid.

There is nothing AT ANY PRICE equal in quality, or so convenient and CLEANLY TO USE.

SOLD EVERYWHERE.

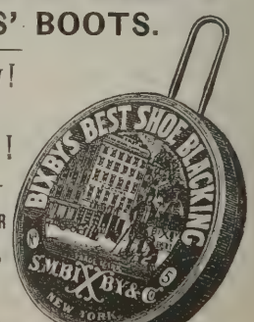
Ask Dealers for "BIXBY'S ROYAL POLISH."



"BIXBY'S BEST"
For GENTS' BOOTS.

Shines Quickly!
Saves Labor and
Leather!!

—TRY—
"Size 5" OR
"Size B"
WITH
Pat. Sliding Handle



THE MOST PERFFECT EVER INVENTED.
Working under the box, ready for use when wanted



To Harden Iron Surfaces.—The surface of cast iron can be made very hard hard by using the prussiate of potash, heating and cooling three or four times, using potash each time.

INFANTS' AND INVALIDS' FOOD.

A CONTRIBUTION TO THE LITERATURE OF THE SUBJECT, BY FRANCIS WYATT, PH. D.

The great, or, I should say, absorbing, interest attached to the question of infants' foods, has lately required from me a predominent share of attention, and I have no doubt that the majority of American Analyst readers will be glad to hear the results of my investigations into some of the most prominent products now being sold in the country. It is asserted, and by reputable authorities, that in proportion as we advance towards a higher plane of civilization we gain our mental and moral culture at the cost of our physical strength. How far this rule is to be applied, and into just what kind of pigmy the man of to-day will finally degenerate, I shall leave other investigators to determine; but it is impossible not to perceive that we are daily increasing our catalogue of diseases; that the *nevrosé* has become a type of our generation, and that the women who suckled large families of healthy children have become extremely rare, if they have not entirely disappeared.

What is the cause of these sombre facts? Is a question for the physiologists, and to such I entrust the answer. I suppose, however, that just as we cannot expect to reap plentiful crops from an impoverished soil, we should not hope to rear healthy children from sickly mothers. Under these circumstances, and as the majority of our mothers *are* sickly now-a-days, it has become necessary to call in the aid of science and to take advantage of the discoveries of chemistry in order to provide for the proper nutrition of our infant children. By the "discoveries of chemistry" I mean those studies into the nature of the elementary components of food; those studies which have taught us that the warmth of our bodies may be sustained by one class of substances; that the repair of our wasting frames and muscular tissues necessitate the use of another, and that the maintenance of good health and condition requires a judicious mixture of both. In this regard need I say that milk has been shown to be the most perfect type of this essential food mixture? Need I point out that the young animal fed exclusively upon it for many months, sometimes for over a year, finds in it all that is required in the formation of bones, muscles and nerves, and flourishes and grows upon it with astounding rapidity? What, then, are the constituents of milk, that it should be an object of such supreme importance? Let us refer to Mr. Gorup Besanez, who, in his remarkable work, *Lehrbuch der Physiologischen Chemie*, has published the following table:

Composition of Various Kinds of Milk.

Every 100 *parts contain:*

	Woman.	Cow.	Goat.	Sheep.	Ass.	Mare.	Buffalo.	Camel.
Water	88.47	85.65	86.30	84.03	91.02	82.83	80.70	86.99
Fat	3.57	4.30	4.35	5.90	1 27	6.87	8.45	2.90
Albuminoids. (Caseine.)	3 51	5.40	4.70	5.30	2 02	1.60	5.55	3.67
Carbo-Hydrates. (Sugar.)	4.05	4.10	4.00	4.10	5.20	8.15	4.50	5.78
Ash	0.40	0.55	0.65	0.67	0.50	0.55	0.80	0.66
Total solids	11.53	14.35	13.70	15.97	8.98	17.17	19.30	13.01

Of the above elements, the sugar and fat both serve the same purpose of maintaining the heat of the body, and it is generally supposed that, in most cases, the one may be substituted for the other, since, when a milk loses in sugar it gains in fat and *vice versa*. The caseine of milk generally spoken of as the "albuminoids," is essentially favorable to growth. It is made assimilable by the action of the gastric and pancreatic juices, and is distributed throughout the economy for the formation of muscle and flesh. The mineral salts (or ash) are not present in very large proportions; their total weight does not exceed an average of one-half of one per cent., and yet they include the phosphate of lime for the construction of bone, and the chloride of sodium and iron so indispensable to the formation of blood.

Human milk is therefore qualitatively and quantitatively the rational food for infants, but as we have seen the supply of this material fails to meet the demand. Hence, the legion of substitutes for it that have been from time to time introduced. In the case of natural milk, that which comes from the cow is, as we might reasonably expect, by far the most generally employed. Unfortunately, however, apart from its well-known instability, cow's milk, as it is served out to us in the towns, is far from being a reliable product, and frequently, instead of containing its quantum of nutritive matter, is transformed, or allowed to degenerate, into a positive poison; innumerable infantile maladies, but too often ending in death, having been traced back to its use. A sickly, or ill-fed cow, living in a vitiated or maladorous stable, cannot be considered a desirable subject to furnish a good milk for infant's food. Neither can the commercial article which has undergone the manipulations—scientific or otherwise—that have fraudulently deprived it of its fat and added to its bulk, consistency, and color, be regarded in the light of a benefaction. Even if we assume, however, that there is no difficulty in obtaining pure and wholesome cow's milk at any hour of the day and in all places, we have still to contend with its variable composition and with its abnormally high percentage of indigestible caseine.* The physician has endeavored to surmount this obstacle by ordering the cow's milk, destined to replace human milk, to be diluted with about one-third of water, in order to spread its solids over a much larger surface! Looking at the general composition of cow's milk, as compared with human milk, and looking at it broadly, from a chemist's standpoint, I am much inclined, however, to question the wisdom of this course, since by its adoption, although we diminish the caseine, we are forced to diminish the percentages of sugar and fat at the same time, and both of these, as we know, are the really important factors in the food of a very young child. This difficulty, or I should say these difficulties, forcedly bring me to the point at which other investigators arrived so many years ago—that is, to a consideration of those methods by which the administration of pure cow's milk, of known origin and cleanliness, taken from well fed, well kept and healthy animals all the year round, may be combined with certain other substances of vegetable origin, so as to affect the required dilution or attenuation of the caseine, while adding to, rather than taking from, the hydo-carbons or fats, and the carbo-hydrates, or sugars. As I said at the commencement, it is not my province to discuss the physiological phase of this question, but rather to furnish data for its fuller discussion by those to whom it more properly belongs. It is for the professor of hygiene to decide whether any artificial compounds whatever can truly replace human milk; whether, even if we make them to contain the same quantities of carbon, nitrogen, lime and phosphoric acid as the natural fluid contains, they can produce the same effect in the economy? As a contribution towards the solution of the problem, I will now proceed, without further preface, to give the result of my recent analysis of various preparations, which I have either obtained from the manufacturers or bought in the open market, and which are already more or less known to, and more or less appreciated by, the general public. I commence with the new product called "malted milk," the label of which bears the imprint of the Horlicks' Food Company, of Racine, Wisconsin, well known to the juvenile members of our community. This preparation came to me in a glass bottle, with a hermetically-closing screw cap. It is a sweet, yellowish-white, granular powder, and is very agreeable to both taste and smell, readily dissolving in lukewarm water. Its composition in percentages is as follows:

Moisture (evaporated by exposure for two hours to 212° F., in the gas oven)	2.90
Fat, (hydro-carbons)	8.95
Albuminoids	15.24
Soluble carbo-hydrates, (maltose and lactose)	68.36
Cellulose	1.10
*Ash (mineral constituents)	3.45
	100.00

That this is a clean, healthy and in every way wholesome and desirable preparation no one will doubt, and that it is destined to soon become very popular with the mothers of our families is a foregone conclusion. There are no complicated directions to stupid nurses or other attendants who may have to prepare it for use, and there is consequently no risk with it, of making any ridiculous mistakes. A little lukewarm water; a given measure of the food; a momentary stirring with a spoon; and the food is ready for consumption. Surely this is within the scope of the meanest capacity. The admixture of fresh (or stale, as the case may be) cow's milk is rendered unnecessary by the sufficient proportion of fat already present in the compound, and there is consequently no risk of acidity, rancidity or putrid fermentation, the three most prominent dangers to infant health.

(*To be continued.*)

*The reaction of this milk with litmus is alkaline.

COMPOSITION OF THE ASH.

Insoluble siliceous matters	1.10
Anhydrous potash	0.66
Anhydrous soda	0.49
Lime, magnesia and iron oxides, determined qualitatively and estimated by difference	0.24
Chlorine	0.45
Phosphoric acid	0.51
	3.45

American Analyst,

Published on the 1st and 15th of each month.

Subscription, - - - - - $1 per year.
Single Copies, - - - - - - 5 cents.
Subscriptions to foreign countries, - $1.50.

Remit by Express Money Order, Draft, P. O. Order, or Registered Letter.

Advertising rates on application.

EUROPEAN AGENCIES.

On file at "American Exchange," 449 Strand, London; and American Exchange," 35 Boulevard Des Capucines, Paris.

THE ANALYST PUBLISHING CO.,
Publishers.

H. LASSING, M. D., } ***Editors.***
T. P. McELRATH, }

No. 19 Park Place, ... New York.

NEW YORK, AUGUST 15, 1888.

CORRESPONDENTS AND EXCHANGES.

Please direct all business communications to

THE AMERICAN ANALYST,
19 Park Place,
New York.

ANSWERS TO CORRESPONDENTS.

ANOKA.—Nothing that will bleach hair is safe to use. Washing in champagne will have no effect differing from sweetened water.

COFFEE.—*Which do you consider a good coffee pot?* This question cannot be satisfactorily answered here. We will try and prepare an article on the subject in an early number.

TEETH.—*How can you reach the interstices between the teeth with those felt tooth brushes?* A tooth brush never should be used as a drilling machine. Use a silk thread to cleanse the interstices.

PORCELAIN.—*Does your article on porcelain and crockery condemn everything but porcelain for table use?* Not by any means. We plainly stated the advantages of true porcelain, and you ought to be able to judge for yourself.

CONSTANT READER.—Corrosive sublimate soap is a good article where corrosive sublimate is needed as an application to the skin, for germicidal purposes. When properly and carefully used it is safe. It is imported. Any druggist can obtain it for you.

HOUSEWIFE.—*To what do the numbers on cotton spools refer?* The number is that which if multiplied by 840 yards will represent a pound of cotton, or in other words it takes 42,000 yards of No. 50 yarn, and 50,400 yards of No. 60 yarn to make a pound.

INQUIRER.—The response to your inquiry can be found in Webster's Dictionary as well as in every elementary work on chemistry. We wish to accommodate our correspondents, but must decline from quoting from the primer or wasting space in explaining trifles which every schoolboy is supposed to be familiar with.

EMMA.—*Please explain the meaning of 8mo and 12mo as applied to books.* These mo's indicate the number of leaves into which the sheets composing a book are folded. Take a sheet and give it one fold and you have a folio of two leaves (4 pages). Another fold, the result is a quarto or 4to, another converts into an octavo, 8vo or eight leaves, another fold makes it a 16mo. Or, if differently folded, a 12mo, 24mo, or 48mo.

ROMEO.—*What is poison ivy?* It is botanically known as *rhus toxicodendron* and also the *rhus venenata*, the former popularly called poisoned sumach, the latter dogwood, both belong to the sumach family—small bushes or trees found almost everywhere especially in swampy or wet ground. All persons are not equally affected by it, some are much more sensitive and many seem to be proof against it. It produces a skin irritation.

W. S. K.—*Please inform me which are the principal languages in use.* It is estimated by Prof. Kirchoff, of Halle, that the language most spoken on the globe—for the last thousand years, at least—is Chinese, for it is, without doubt, the only one which is talked by over four hundred millions of the human race. The next language most in use, but at a very great distance behind Chinese, is Hindustani, spoken by over 100 millions. Then follow English (spoken by about 100 millions), Russian (over 70 millions), German (over 57 millions), and Spanish (over 47 millions).

OUR MIDSUMMER GREETING.

The continued prosperity and growth of the AMERICAN ANALYST are strong evidence of the intellectual development of the reading public, as well of the intrinsic merit of the journal itself. The present generation, unlike its predecessors, spares neither time, trouble nor expense in securing the best in every field. In the household, above all else, it imperatively requires that everything used and to be used shall have received the praise and recommendation of the physician and scientist. To this class, large and influential, the AMERICAN ANALYST appeals, and from this class it draws its circulation. It endeavors to popularize science, so far as daily life is concerned; to point out and denounce unscientific practices, injurious habits, deleterious drugs and food substances, adulterations and impurities, and, on the other hand, to introduce new ideas, valuable discoveries and inventions, admirable alimentary substances, meritorious medicines and every novelty which tends to make existence better, healthier, cheaper and happier. This course has gained the good will of its many subscribers, to all of whom it tenders its thanks and good wishes and its promises to continue in its good work. The same policy has won for its columns the finest advertising support ever given to a journal in the United States. No other periodical can show a list in which appears no name but of the highest commercial, professional or scientific standing, no notice of anything improper, injurious, dishonest or wrong, no card of quack, charlatan, imitator, adulterator or fraud, and no line of falsehood, *suppressis veri* or suggestion of untruth. And this fact is appreciated by every reader. The names which he sees he knows represent the best class of the industry to which they belong.

Of baking powders he finds Cleveland's, Price's, the Sterling and Forest City, the purest and best in the market; of malt liquors, those of Clausen, Beadleston & Woerz, Greenway, the Germania and the Moerlein all approved unanimously by chemists and physicians. If his attention is called to fine foods, he sees Gordon & Dilworth, Armour & Co., Swift & Co., Robert Gordon, Lea & Perrins, John Duncan's Sons, T. P. Rogers & Son, the Imperoyal, the Billet, W. Baker & Co. and James Chalmers' Sons. If fine wines and whiskies are needed, he chooses from such concerns as Alex. Young Co., White, Henz & Co., the Ruby Royal and C. P. Moorman & Co., or Park & Tilford. The ware for his kitchen is either Patent Granite or Agate. If the father of an infant, he buys its food from Reed & Carnrick, the Malted Milk Co., Farwell & Rhines, the J. P. Bush Mfg. Co., C. N. Crittenton, Doliber, Goodale & Co., or Thos. Leeming & Co. When sick, he finds the best specifics in Lactopeptine, Hayden's Viburnum, the Uric Solvent, Jensen's Pepsin, Horsford's Acid Phosphate, Farmville Lithia Water, Peacock's Bromides, Bromo Soda, Sura Cura, Acid Mannate, Keith's Avena Sativa, Quina La Roche and Dean's Licorice, and the most comfortable bed in a Torsion Braided Wire Mattress. For his bath room he is at a loss to choose between Fairy Soap, Cashmere Bouquet and Althene Skin Soap. His starch is Kingsford's or Gilbert S. Graves'. Equally high in their respective fields is the Ideal Felt Tooth Brush, Burnett's Flavoring Extracts, Bixby's Blackings and Polishes, Royal Salad Dressing, Thurston's Tooth Powder, Adam's Tutti Frutti, Esterbrook's Pens, Natrona Bicarbonate of Soda, McIlhenny's Tabasco, or Llado's Corks. These are but a few of the advertisers of the AMERICAN ANALYST, but the name of each is as familiar as a household word. Singularly enough, they never all meet in any other periodical. Each appears in trade journals and special publications without number. They all appear in this journal because it alone connects the producer directly with the consumer, and under the best possible auspices. While business wisdom and notable enterprise prompt the action, yet the AMERICAN ANALYST acknowledges gratefully its appreciation of the fact; and while renewing to them the assurance of its esteem, promises to make its columns even brighter, better and more valuable in the future than they have ever been before.

THE GROWING RESOURCES OF THE SOUTH.

A national exhibition of American cotton fabrics is to be held this year, from October 10th to November 17th, in Augusta, Georgia, the largest cotton manufacturing centre in the south. Although national in its scope, the enterprise is wholly of local inception and management, no outside aid having been solicited in its behalf and no appropriation for it having been made by the government. In this respect the project commends itself by its conspicuous novelty. Despite, however, the modest independence of the undertaking, national significance will be attached to it through the co-operation promised it from all sections of the country. Many of the largest manufacturers in the North and West will be represented and an extensive government display is already secured from all the executive departments and branches of the consular service. It will be chiefly notable as constituting the most complete representation that has been given since such a showing has possessed any significance of the combined industries of the South, and of the development achieved during the past ten years of the resources of the fields, forests and mines of that steadily growing region.

PRE-HISTORIC AMERICA.

It appears a little odd that we should look to Europe for modern information relating to this country. There is, however, an international congress to be held in October, in Berlin, of "Americanists," and the programme of proceedings has just been published by the committee on organization. The session will occupy four days, from October 2d to the 5th inclusive. The first day will be devoted to questions relating to the discovery of the New World, to the history of America before the time of Columbus, and to American geology; the second day to archæology; the third to anthropology and ethnography, and the fourth to philology and polæography. In the same manner that the best history of the War of the Rebellion, thus far, was written by a Frenchman, it may turn out that the most profound information regarding this country, prior to the 15th century, has found lodgment in the minds of the patient investigators of Germany.

KEEP UP THE QUALITY.

Our attention has been called to the fact that several manufacturers whose goods the AMERICAN ANALYST had examined and favorably commended some time since, are now putting upon the market much inferior goods, evidently depending upon the reputation of their former output to sell the present make. This is exactly like the negroes in anti-war times, who, when a pig was given them by their master, would sell several hogs during the year, and when questioned always alleged that "it was the pig that massa gave me." Such prac-

tices will recoil on the perpetrator. We are now investigating several such complaints, and if we find any evidence, shall take pains to fully expose these men.

PROGRESS OF THE PERIOD.

The municipal authorities of Paris have voted 1,000,000 francs to erect an electric light station to supply the entire city with light. A cable despatch states that is doubtful if the government will grant such a monopoly.

The *Bee Journal* figures that the annual honey product of North America is about 100,098,090 pounds, and its value is nearly $15,000,000. The annual wax product is about 500,000 pounds, and its value is more than $100,000. There are about 300,000 persons keeping bees in North America.

A botanist thus describes how the leaves change their color in autumn. He ridicules the belief that frost has anything to do with it: "The green matter in the tissue of a leaf is composed of two colors, red and blue. When the sap ceases to flow in the autumn, and the natural growth of the tree ceases, oxidation of the tissue takes place. Under certain conditions the green of the leaf changes to red; under different conditions it takes on a yellow or brown tint. This difference in color is due to the difference in combination of the original constitution of the green tissue and to the varying conditions of climate, exposure and soil. A dry, cold climate produces more brilliant foliage than one that is damp and warm. This is the reason that our American autumns are so much more gorgeous than those of England."

The Sheffield Free Library has adopted the plan of fumigating the books. They are exposed for fifteen minutes to the fumes of carbolic acid at a temperature of from 150 to 200 degrees. This is the precaution which the AMERICAN ANALYST several mouths ago recommended for adoption in some of our New York libraries, in one of which, at least, many of the books are literally unfit to be handled or touched.

Chemistry and biology go hand in hand along the path of discovery, and mankind stands ready to receive the results of the researches and reward the discoverers with fame and fortune.—*Sanitary News.*

WINE MATURITY.

WHAT ARE MEANT BY RIPE AND UNRIPE WINES AND LIQUORS.

It seems a misuse of the word when we apply the term ripening to such products as wine and liquors, yet as a matter of chemical and gastronomic science, the application is not only appropriate but even happily suggestive. The analogy between the process undergone by a peach in passing from the green to the mature stage, to that undergone by a wine or liquor is, if possible, more than an analogy, and closely approaches identity. The fruit changes in texture, becoming softer and less fibrous, the starch is modified into glucose, minute quantities of hydro-carbons are broken into the compound ethers and alcohols, which make up the flavor and bouquet, and many injurious substances are broken down and destroyed. So in the aging of a Madeira wine, a whiskey or brandy, there is a change in the texture, or, to use a more accurate term, the specific gravity. A microscopic amount of germ is metamorphosed into glucose, small quantities of the fusil oils are broken into more composite compound ethers and alcohols, and other elements are lost or destroyed. It is no exercise of the scientific imagination, but a demonstrable truth, that a pear which passes into delicious and perfect maturity upon the bough, passes through the same development as a barrel of old Madeira or a cask of cognac in a well appointed warehouse. The analogy or identity runs even further. Unripe fruit is notoriously difficult of digestion, producing serious disorders. Its taste and odor are frequently repulsive, if not at least disagreeable. It is used only by the ignorant, and notably by the small boy, so often ridiculed by the humorist and paragrapher. Unripe wines and liquors often exert a corresponding influence upon the assimilative system. A new or "green" Bordeaux or Burgundy frequently causes vomiting; fresh cider and grape juice, diarrhœa; raw whiskey, gastritis and enteritis. Such goods are never used by the connoisseur, but only by the ignorant. It requires but little knowledge and experience to discriminate between ripe and unripe fruit. It requires much to distinguish between ripe and unripe wines and liquors.

SCHOOL ARCHITECTURE.

WHY SHOULD SCHOOL HOUSES NOT HAVE HANDSOME EXTERIORS?

School house architecture has of late received a share of the attention which is its just due. The lighting, heating, ventilation and sanitation generally of most modern city educational buildings leaves little to be desired. The era of the barn school house, hot in summer and cold in winter, with the light coming in just where it could get a chance to, and the seats arranged so as to crowd the largest number of coming men and women into the smallest space is past. If children suffer in the modern school house, it is not from preventable physical causes. It is from over study or uncongenial branches of learning forced upon them, or unsalutary home surroundings. Just now, when the interior has received its share of modernization, is a good time to glance at the exterior of the structure. What does it most resemble? There are two types that have met and offended the writer's eye—the Saratoga trunk and the wedding cake varieties—one a mere box, and the other ornate with gingerbread ornamentation. The first may be justified on the ground of the necessity for economy, the last by no consideration, and its author should be condemned to confront examples of his monstrosities for the rest of his natural life. What is pleaded for is that classical models be taken for the modern school house. The following out of correct principles can cost no more than the wretchedly "pretty" buildings one sees on every hand. Among the advantages, apart from the mere æsthetic one of having public buildings models of correct style and taste, may be mentioned that of the instructive value to the little inhabitants of the building of the daily contemplation of an example of a leading type of architecture, about which the teacher is, perhaps, in vain trying to imbue the innocents with an abstract idea. The different leading elements of typical architectural structure might be also carefully preserved and made clearly distinguishable on the design which could be reproduced in perspective and elevation on the interior walls. As an object lesson in the rudiments of architecture a classically constructed school house would be of great value. —*Sanitary News.*

THE AMERICAN DAIRY.

WHAT THE COW GIVES ANNUALLY TO THE UNITED STATES.

Under the title of "What the Cow Gives Us," originally from the *American Breeder*, a statistical article is going the rounds of the dairy and trade press showing the extent, value and importance of the dairy industry. What the cow gives us is declared to be $500,000,000 worth of dairy products, good, bad, vile, poisonous or otherwise, as estimated for last year in milk, butter, cheese, water, acids, chemicals, color, oils, etc., etc. The proportion of milk, butter or cheese produced does not, of course, appear, but taken as a whole the article is intended to show the great money value in cows and cow products, and the importance, commercially and politically, of the 4,000,000 farmers who own them. Whether the figures are correct or not, there is no doubt that the dairy industry is very large, and susceptible of still larger expansion. One thing, however, is very certain, that out of 1,350.000,000 pounds of butter said to be made last year, at least one-third of it ought never have been permitted to have been sold for food. The same may be said of cheese, a big part of the annual product being skim or filled cheese, and about as nutritious and digestible as sawdust. Competent observers are of the opinion that a large part of the increase, both in production and value of dairy products, represent merely the increased adulteration and dishonesty on the part of the dairymen and farmers. Take from the estimates of "What the Cow Gives Us" the beef and hog fats and vegetable oils, not to speak of the more pernicious adulterants, such as chemicals and acids, salt, water, coloring matter and other things which are taken from various sources and finally credited to the cow, and the real showing would be much less.—*Produce Exchange Bulletin.*

QUEER DRINKS.

HOW THEY KEEP TRACK OF TIME AT THE ANTIPODES.

The following bill of fare is from a New Zealand paper:

Eye Opener	6	A. M.
Refresher	6.30	"
Appetizer	7	"
Digester	8	"
Big Restorer	9	"
Stimulator	10 to 11	"
A Nooner	12 noon.	
Mixed Special	12.30	P. M.
Greased Lightning	1	"
Settler	1.30	"
Lightning Express	2	"
Pick-me-up	3	"
Invigorator	5	"
Solid Straight	6	"
Barmaid's Smile	8	"
Pleasant Talk	9	"
Pony	9.30	"
Sparkler	10	"
Sudden Death	10.30	"
Corpse Reviver	11	"
Traveller's Rouser	11.30	"
Floater's Night Cap	12	"

ATMOSPHERIC NITROGEN.

AN INTERESTING INVESTIGATION IN PROGRESS.

Late research in this country and in Europe implies that some plants have the power of getting nitrogen from the air. How they obtain it, how much is gathered by the foliage, and how much comes through the soil and the roots of the plants, are things to be found out. If there are plants that can draw this scarcest and costliest of all the elements of plant food from the air, it is important to know what plants they are and the circumstances under which they get it. If the nitrogen must first be introduced into the soil by natural processes or by manuring, we need to know how this can be done most economically. How much nitrogen plants can obtain from the atmosphere is a problem best studied by experiments on a small scale in the greenhouse or laboratory. For the investigation of this latter question, which has a high scientific as well as

practical importance, Storrs School Agricultural Experiment Station at Mansfield, Conn., has begun a series of experiments in pots by the method of sand and water culture. Late research implies that the minute organisms called microbes or bacteria may have something to do with the acquisition of atmospheric nitrogen. This especial problem is being studied in connection with the experiments on nitrogen supply under the immediate supervision of the director, Prof. W. O. Atwater.—*Science.*

AN APPETIZING DISH.

A foie-gras omelet is a good thing to begin luncheon with or to serve as a savory, and should be made from this recipe. Break four eggs into a basin, and then add a spoonful of cream, four ounces of butter, pepper, salt and a little chopped parsley. Then melt two ounces of fresh butter in an omelet pan on the gas stove. While it is melting whip your basinful of ingredients into a froth, adding them to the butter in the omelet pan when that butter begins to fritter. Stir the omelet, and as the eggs begin to set and become firm roll your omelet into shape. But you must put in thin slices of foie-gras, arranged with discretion, just before you shape your omelet, so that it may melt into the mixture. Let the top of the omelet acquire a golden brown over the fire, and serve it with a good brown stock poured round it just before sending up.—*Whitehall Review.*

ARTIFICIAL FLAVORS.

WHAT THEY ARE AND HOW THEY ARE MADE.

In the wonderful laboratory of the growing plant, by processes of which we know almost nothing, the atoms of carbon, hydrogen, oxygen, and nitrogen are made to group themselves into compounds which give to our vegetables and fruits the delicious flavors characteristic of them. In most cases, this flavoring principle is so small in quantity, and so complex in its nature, that the chemist is unable to satisfactorily determine its composition ; and it is probable that few of the natural flavors are simple chemical substances, but rather mixtures of different organic salts, ethers, and alcohols. The flavoring principle of the majority of fruits can be directly extracted and preserved by simple means, forming extracts for flavoring food which are as unobjectionable as they are agreeable. Unfortunately it happens, however, that many of these flavors can be imitated by various chemicals, which, while they are much cheaper than the natural product, are unwholesome and even dangerous. As a general thing, the artificial flavors are much coarser and ranker than the natural ones, and lack entirely the peculiar fruity taste distinctive of the latter. The greater part of the artificial essences belong to the class of compounds known as *ethers*, or, more strictly speaking, salts of an organic acid and base. The artificial essence pineapple, for instance, is composed of *ethyl butyrate*, or a combination of butyric acid (the acid of rancid butter) and a radical known as *ethyl* (C_2H_6), which is also present in common alcohol. By combining the ethyl with *pelargonic* acid, we obtain an ether with a flavor resembling that of the quince. *Ethyl caprate* is sometimes known as œnanthic ether, and is one of the flavoring substances found in old wine. Another radical, *amyl* (C_5H_{12}), is also the base of several artificial flavors. Amyl alcohol C_5H_{11}–O–H is the poisonous fusel oil found in the poorer grades of whiskey. *Amyl acetate* forms the well-known essence of Jargonelle pear, while *amyl valerianate* is a very good imitation of the flavoring matter of the apple. Amyl caprate is found in Hungarian wine.

The natural flavors of the peach, plum, almond, etc., are due to nitrogenous bodies containing cyanogen, the base of the poisonous prussic acid. With the exception of the almond, these flavors are not often imitated; but a substance made from coal tar, known as *nitro benzole*, has an intensely strong taste and odor of bitter almonds, and under the name of oil of mirbane, is employed to a considerable extent as a perfume and flavoring extract It is, however, a powerful poison, and should never be added to food. Vanilla, as is well known, is the product of a Mexican plant. When pure it is perfectly wholesome, but it has been said to sometimes undergo a spontaneous decomposition, which renders it dangerous. This, however, is not fully confirmed, and the bad effects observed may have been due to other causes. It contains a substance commonly known as *vanilline*, but chemists distinguish it by the brief appellation methyl-protocatechuic aldehyde. This is now made artificially, in large quantities from the gum of the spruce and other coniferous trees. There are many other organic bodies which possess very characteristic odors, although not commonly used for flavoring purposes. *Formate of ethyl* is sometimes used to give an agreeable taste to rum. *Acetic ether*, or acetate of ethyl, has the fragrance of cider, while *acetacetic ether*, $C_2H(C_2H_3O)HO.O\ C_2H_5$, has the odor of new mown hay. *Ethyl nitrite* has a pleasant apple-like smell; while *amyl nitrite* has an odor peculiar to itself, which produces such remarkable physiological effects, that it is extensively used as a medicine. *Salicylate of methyl* occurs in the oil of wintergreen (checkberry), and was one of the first vegetable products prepared artificially. With the exception of nitro-benzole, all the artificial flavors mentioned above are composed of three elements only, carbon, hydrogen, and oxygen. All the wide differences in odor, taste, and chemical behavior, are due to slight variations in the proportions of these elements, and probably, also, to the position in which their atoms are arranged in the molecule. Strictly speaking, the only difference between the odorless glucose and the fragrant pineapple oil is, that the latter contains four atoms less of oxygen; and the relation between the chemical composition and the physical properties of the organic bodies is a most important but still unsolved chemical problem. We may hope to know much more in the future, as many skillful and patient investigators are hard at work upon this very subject. Although many of the above flavors are so strong that only a very small quantity is necessary to flavor a large amount of food, yet their use cannot be recommended. They are unwholesome, to say the least, and some are actually poisonous. Only natural fruit flavors should ever be allowed in the kitchen; and the cheap artificial essences should be left in their proper place, on the shelves of the chemist's laboratory.—*Popular Science News.*

DOMESTIC DIETETICS.

SPECIALLY PREPARED, FROM PRACTICAL TESTS, FOR THE LADY READERS OF THE "AMERICAN ANALYST."

SEASONABLE FOOD.

August.

MEATS.—Beef, lamb, mutton, veal, ham, venison, kidneys, liver.

GAME AND POULTRY.—Pigeon, woodcock, chicken, duck.

FISH.—Bass, blackfish, bluefish, clams, cod, crab, eel, flounder, halibut, herring, lobster, mackerel, porgie, prawn, rockfish, salmon, trout, sturgeon, weakfish.

VEGETABLE.—Beets, beans, cabbage, carrots, cauliflower, corn, cucumbers, egg plant, garlic, lettuce, okra, onions, parsley, parsnips, potatoes, radishes, rhubarb, shallots, spinach, squash, tomatoes, turnips.

APPLES.—Apples, blackberries, gooseberries, grapes, huckleberries, melons, oranges, peaches, pears, pineapples, plums, watermelons.

PRACTICAL RECIPES.

GRAVY SOUP.—Take a leg of beef, well wash and soak it, break the bone, put it into a saucepan with a gallon of water, a large bunch of sweet herbs, two large onions sliced and fried to a nice brown, taking great care they are not burnt, two blades of mace, three cloves, twenty berries of allspice, and forty of black pepper, and stew till the soup is as rich as you wish it to be, then take out the meat; when it is cold, take off the fat, heat the soup with vermicelli and the nicest part of a head of celery boiled and cut to pieces, cayenne and a little salt; carrot may be added, with turnips cut up into small pieces, and boiled with spinach and endive, or the herbs without the vermicelli, or vermicelli only; add also a large spoonful of soy and one of mushroom ketchup ; a French roll should be made hot and put into the soup.

STURGEON BOILED.—Soak the fish in salt and water four hours, remove it, and bathe with pyroligneous acid diluted with water, let it drain an hour, then put it into boiling water, let it be well covered, add three onions, a faggot of sweet herbs, and a small quantity of bay salt. When it is boiled so tender that the bones will separate readily, remove it from the fire, take away bones and skin, cut it into slices, dredge it with flour, brown it before the fire, and serve with drawn butter.

GREEN PEAS. — Boil the pods fifteen minutes in slightly salted water; strain them out, drop in the peas and cook tender, but not until they break. Drain dry; stir in salt, pepper and a good lump of butter. Serve hot.

BROILED MUSHROOMS.—Use the large flat mushrooms. Have a very clear fire; make the bars of the gridiron very clean and hot, and rub them with suet to prevent the mushrooms from sticking. A few minutes will suffice to broil them. When they steam out sprinkle them with pepper and salt; have ready a very hot dish; take up the mushrooms and lay them on the dish, and then put a bit or two of butter under and over each.

STEWED MUSHROOMS.—Put the mushrooms in a small saucepan with pepper and salt, a bit of butter and a spoonful or two of the gravy of roast meat or cream; shake them about over the fire, and when they boil they are done; then pour them over the hot broiled steak, on a hot dish, and serve at once.

CORN CAKES.—Scald one pint of meal; when partially cooled add half a teaspoonful salt, a teaspoonful sugar, one egg well beaten, and mix with sweet milk or warm water, making a thick batter. Then add two teaspoonfuls Horsford's baking powder; stir thoroughly and bake immediately in shallow pans in a quick oven.

A RICH CURRANT CAKE.—Beat up one pound of good butter to a cream, and mix well with it one pound of sugar and half ounce of mixed spice; separate the yolks and whites of ten eggs, beat them up, the whites to a froth, and work them in gently to the butter and sugar; add one pound of mixed citron, lemon and orange peel cut up; one pound of washed and dried currants. When well mixed, stir in one pound of flour and a wineglassful of brandy; beat the mixture for some minutes and pour it into a well buttered tin, with three or four rounds of buttered paper at the bottom. Bake for three hours.

GALANTINE VEAL.—Take a large breast of veal; take off the chine bone, then take out the gristle called tendons, and all the rib bones; flatten it well, have ready some good forcemeat or sausage meat, and spread it all over with your forcemeat; then make a line of green gherkins, a line of red capsicums, a line of fat ham or bacon, some hard-boiled yolks of eggs, and a line of truffles; if you have any boiled calves' feet left from jelly stock, sprinkle it in with pieces of breast of fowl; sprinkle pepper and salt all over it, then roll it up tightly, and likewise do so in a cloth; tie it up tight; stew it for two hours or more; take it up, press it flat, and let it lie until quite cold; then take off the cloth. It will make an excellent cold dish.

CRUMPETS —Mix together thoroughly while dry, one quart sifted flour, loosely measured, two heaping teaspoonfuls Horsford's baking powder, and a little salt;

then add two tablespoonfuls melted butter, and sweet milk enough to make a thin dough. Bake quickly in muffin rings or patty pans.

COMMON GINGERBREAD.—Take a quart bowlful of flour, and rub into a teacupful of sweet butter, two cupfuls of sugar, three of molasses, teacupful of cream, teaspoonful salaratus, ginger to your taste. Make it stiff batter, bake in a quick oven.

RAW BEEF TEA.—Take about an ounce of steak, and, holding it securely to the table with a fork, scrape or shred the flesh from the fibres with a sharp knife. Place the shreded meat in two tablespoonfuls of cold water and soak fifteen minutes, then strain and use. This is excellent for typhoid fever cases and teething children.

SPONGE CREAM.—One pint of fresh milk, three tablespoonfuls of good gelatine, three tablespoonfuls of sugar, three eggs. Put gelatine into cold milk, let it stand a little while; put on stove and bring milk to boiling point, then add the sugar and yolks of eggs which have been well beaten together. Remove from the fire and stir in the whites, which have also been beaten stiff. Add a little salt and flavor to suit, and pour into molds; wet first so the cream will turn out easily.

A FAST ENGINE.—An application has been filed by a New York civil engineer, for a patent for a locomotive and tender designed for making faster time than has ever been made in this or any other country. The boiler is rectangular in shape, having a large and permanent area of evaporating surface, supported by a great extent of heating surface, the pressure to be carried being 210 pounds per inch, which is but one-third of the bursting pressure at its weakest points. The cylinders are in the rear of instead of between the truck wheels, and the fire-box is supported between the centre of gravity of driving wheels. All the combinations of parts are in exact harmony. It is intended easily to make the time of sixty miles an hour with ten coaches. The maximum speed is to be ninety-five miles an hour. This gain in performance over the present machine is obtained by a mathematical construction with reference to the distance between rail centres upon which it is supported.

UTILIZING SOAP BUBBLES.—At a recent meeting of the Physical Society, London, C. V. Boys described and performed some experiments on soap bubbles, and by their aid demonstrated in a remarkable manner, the phenomena of surface tension, diffusion, and the magnetic properties of gases. By blowing one bubble inside another he showed that there is no electrical force inside a closed conductor. A peculiar property of soap bubbles is their refusal to come into contact when knocked against each other; they may receive violent shocks and still remain separate. If, however, an electrical body be brought in the vicinity they immediately coalesce. So sensitive are they to electrical attraction that a potential difference due to one Leclauche cell between the two bubbles causes them to unite. They may thus serve as a very delicate electroscope.

RAILWAY BRAIN.—"Railway brain" is a term applied by Dr. Thomson to a neurosis or general derangement of the nerves produced by a shock received by the head on a railway car. In the particular case described no wound was received, and consciousness was preserved at the time of the injury. Afterward the patient became melancholic and complained of insomnia, headache, spinal pain, weariness and failure of appetite. A hygienic and palliative treatment was given.

ELECTRICAL FISHERY.—The most blase fish that ever wore scales and shunned a baited hook will draw near in thrilled wonderment to an electric light submerged in his native element, and so be allured to his fate. The United States steamer Albatross has been fitted with electric fishing lights for the conduct of scientific research, and preliminary experiments with these lights have revealed the fact that the curiosity of fish to investigate this unwonted radiance brings them to the light in shoals.—*Electrical Review.*

WATER-PROOF PAPER—Paper treated with a mixture of camphor oil and linseed oil becomes water-proof.

EASILY TRIED.—Put dishes, tumblers, and other glass articles into a kettle, cover them entirely with cold water, and put the kettle where it will soon boil. When it has boiled a few minutes set it aside covered close. When the water is cold take out the glass. This process will harden the article so that they will not be so easily broken.

ABSOLUTE ALCOHOL OBTAINED WITHOUT DISTILLATION.—If gelatine be suspended in ordinary alcohol it will absorb the water, but as it is insoluble in alcohol that substance will remain behind, and thus nearly absolute alcohol may be obtained without distillation.

A SWINDLE SOMEWHERE.—According to some figures given in the *Weinlaube*, the organ of the German wine dealers, the total amount of true cognac brandy distilled from wine, from grapes, is from 20,000 to 25,000 hectolitres, or say from 500,000 to 625,000 gallons. Of this a large proportion is kept for domestic use, and yet France manages to export to England alone over 100,000 hectolitres, or 2,500,000 gallons! Besides this some 60,000 hectolitres of the same kind of "pure cognac" are sent annually to the balance of the world, the United States getting about half of it. In other words, France is able out of a production of 500,000 gallons of brandy to drink all she wants and sell 4,000,000 gallons!

A VISIT TO DR. AYER'S LABORATORIES.



We present, above, a portrait of Dr. J. C. Ayer, of Lowell, Mass., the originator of the celebrated family medicines which have made his name a household word in nearly all civilized countries. Probably few of those who use these famous remedies have an adequate conception of the extent and resources of the establishment in which they are compounded. A recent visitor to the J. C. Ayer Co.'s laboratories thus expresses himself: "I have long been aware that Dr. Ayer's Pills are the best for certain complaints, because I have myself tested their efficacy; but when I visited the place where they are compounded, examined the ingredients of which they are composed, observed the skill and neatness manifest in every department, from the chemical laboratory to the airy and pleasant rooms where dainty girls put up these 'medicated sugar-plums,' I could no longer wonder that the world demands from ten to fifteen tons of them annually.

"I was even more impressed with the operation of the other branches of this vast establishment—in the sections devoted respectively to the preparation of Ayer's Sarsaparilla, Ayer's Cherry Pectoral, Ayer's Hair Vigor, and Ayer's Ague Cure. Not only is everything on a gigantic scale, but it is of the best, both as to material and appliances. Many of the mechanical contrivances in use were devised expressly to meet the needs of the company, and are marvels of adaptability, the latest being a wonderful printing and folding machine, by which a hundred thousand almanacs, are printed and folded, ready for the binder, daily. To do this, the machine turns off at the rate of a hundred and eighty books a minute, consuming about twenty-five miles of paper a day—*miles*, mind you! At each revolution of its two plate cylinders, the machine prints four books of 32 pages each—and these may be, and often are, each in a different language. This extraordinary piece of mechanism was constructed by Walter Scott & Co., of Plainfield, N. J., and is justly regarded by experts as a triumph of mechanical skill and ingenuity.

"Who has not seen Ayer's Almanac, that most accurate and valuable compilation of its class? First issued in 1852, it was then printed only in English. It now appears in ten languages, the various editions aggregating nearly fourteen million copies yearly. A large allowance for future growth is provided for, as the Scott machine above mentioned is alone capable of producing—with a fair margin for stoppages—twenty-six millions of books per annum. In addition to the Almanac, this house issues a 'Book of Emergencies,' a most valuable medical *vade mecum* (which any one may have for a cent stamp), also forty millions of circulars, annually, in English, French and Spanish, besides pamphlets, in twenty languages, including the French, German, Spanish, Portuguese, Swedish, Bohemian, Norwegian, Polish, Welsh, Italian, Greek, Finnish, Armenian, Chinese, Turkish, Bulgarian, Burmese and Hawaiian. The printing of this material, together with wrappers, labels, etc., requires the constant use of nine large printing presses every working day in the year, consuming, for the Almanac alone, nearly three tons of paper per day.

"Seeing all this, I could easily comprehend why Ayer's medicines have become standard remedies the world over, being as familiar to the far-off Australian or South American as to the neighboring Canadian or New Englander. So popular, indeed have they become that scarcely a ship sails from New York, Boston, San Francisco or any other American port without including in its cargo and stores a supply of these medicines."

It is a matter of common repute that Dr. Ayer & Co. have recently been subjected to very harsh treatment from the Canadian Customs Department on account of alleged frauds upon the revenue. Goods of the firm, to the value of nearly $80,000, were seized in May, 1885, and the payment of nearly $500,000, in duties and penalties, was demanded. Unwilling to admit, by the payment of any part of the enormous sums exacted, that they had been guilty of fraudulent acts, the firm suffered their case to be carried into the Dominion Courts, where they have been triumphantly exonerated of the charges brought against them. Chief Justice Ritchie delivered judgment in the case, at Ottawa, June 27, 1888, dismissing the actions brought by the Customs Department, and ordering the restoration of the goods held under seizure. The Chief Justice justified the conduct of the Messrs. Ayer & Co. during the entire term of their business in Canada, and said that the suit was the result of a conspiracy organized by customs' officers at Montreal and a discharged employee of the firm. We congratulate Dr. Ayer & Co. on the vindication of their business methods. Their name has long been the synonym of high character and honest dealings throughout the world.

BUSINESS NOTES.

DELIRIUM TREMENS—NERVOUS AFFECTIONS

I have used Peacock's Bromides in epilepsy, delirium tremens, hysteric epilepsy (demented), nervous affections, arising from different causes, with perfect satisfaction; also in rheumatic insomnia, which it cured entirely and permanently, after not resting with an enlarged knee for two months; and in various forms of delirium, meningitis and pneumonia, and must say it is equal to all cases or diseases for which it is recommended, that I have tried.

Galveston, Tex. D. E. THRASH, M. D.

A LITTLE PLAIN TRUTH.

As Justice Barnard, of the Supreme Court, remarked in a late libel suit, it is the duty of good journalism to correct errors, to pillory frauds and shams, to expose lies, and to denounce liars. The Royal Baking Powder has posed several years before the American public in a false position, and in its desire to build up its own business and destroy all honest competition, has spread broadcast in every form a series of falsehoods, suppressions and distortions of the truth, exaggerations and slanders. While by this course it has forfeited the esteem of the few who have enjoyed a thorough scientific education, it has succeeded to an unfortunately large extent in gulling the great reading public, and in establishing a very lucrative trade. Among the dishonest and malicious assertions which it publishes wholesale are:

1. That it is absolutely pure and wholesome.
2. That all other powders are inferior in purity and healthfulness.
3. That acid phosphate or lime powders are injurious.
4. That burnt ammonia-alum powders are harmful.
5. That it is unanimously approved by the medical faculty and scientific experts.

6. That all authorities condemn acid phosphate and burnt ammonia-alum powders. Of these six propositions not one is strictly truthful and every one is unfair, dishonest and unscientific. In order to show the exact state of facts, let us consider them seriatim.

I.—THE PURITY OF ROYAL BAKING POWDER.

The Royal is a mixture of cream of tartar, bicarbonate of soda (or in everyday speech, baking soda), carbonate of ammonia (or sal volatile) and starch.

Of these four ingredients, the cream of tartar is manufactured for the baking powder business by a pool or syndicate controlled by the New York Cream of Tartar Company. It is the same kind as is used by the Cleveland, Price, Preston & Merrill, Sterling, and other first-class preparations. It is pure. The bicarbonate of soda used by the Royal is a fair commercial article, but it is not as pure as that used by all of the other manufacturers of any standing. That employed by the Royal always contains incidental impurities, and more especially sulphate of soda and mono-carbonate. While these are probably not unwholesome, they are impurities. The carbonate of ammonia is peculiar to the Royal and is used by no other manufacturer so far as is known. It is seldom pure and it is very unwholesome. Ammonia is essentially a product of decay and death. Originally it was made from urine, waste blood, decayed bones, hoofs and horns (from which comes its favorite name of spirits of hartshorn); it is now made chiefly from petroleum refuse, coal tar impurities and similar disgusting sources. Ammonia save in the smallest quantities is a poison whether in liquid or gaseous form. While theoretically it is dispelled by heat during the process of baking bread made with the Royal, this is not necessarily the case in every instance. At times some is left and gives the loaf an unpleasant taste and smell.

More serious, however, is the residue left by the Royal in the bread. It consists of Rochelle salts and in some cases of this substance combined with an injurious salt of the same class in which ammonia replaces soda, potash or both these alkalies. This residue retards and injures digestion as has been demonstrated by Prof. Doremus and Dr. Doremus, and acts detrimentally upon the bowels as has been shown by more than one hundred prominent physicians.

In brief, therefore, it is evident that the Royal is neither pure nor wholesome.

II.—THE PURITY OF OTHER BAKING POWDER.

Of equal mendacity is the Royal's claim that all other powders are inferior to it in purity and healthfulness. Of the leading cream of tartar powders in the market, Cleveland's, Price's, Preston & Merrill's and the Sterling use the same cream of tartar and starch, a better bicarbonate of soda, and do not use the mephitic carbonate of ammonia. They are purer, better and more wholesome. Of the acid phosphate powders, nearly all use the salt made by the Rumford, Provident Chemical Works, or the United States Chemical Company, which is pure and more than wholesome, a better bicarbonate of soda and about the same starch. The residue left by these powders is not injurious as is that from the Royal. Of the ammonia-alum powders, all that are prominent use a pure salt, and a pure bicarbonate of soda. The residue left by them in bread, Glauber's salts, is harmless and VASTLY superior to the complicated residue of the Royal.

Or in other words, the chief competitors of the Royal, Cleveland's, Price's, Preston & Merrill's, the Sterling, Horsford's, the Patapsco, Davis', Silver Star and a host of others, are not only not inferior, but are superior to it in purity and healthfulness.

III.—ACID PHOSPHATE POWDERS.

The Royal combines falsehood with imbecility when it declares acid phosphate powders to be injurious. As a matter of fact, acid phosphate is theoretically one of the best articles known for the purpose. Wagner, the most distinguished chemical authority in this field, pronounces acid phosphate powders the best and most scientific preparation in existence, and the French government, always keenly alive to food problems, has adopted it for the army, navy and civil service, and prohibited nearly all others, especially such as the *Royal*.

Acid phosphate powders leave a residue of phosphate of lime and soda, a substance closely allied to the mineral elements of the teeth and bones, which is easily assimilated by the system and used as a source of phosphorus by all parts of the body. It is not only wholesome, but is an invaluable nerve, brain and bone food.

IV.—BURNT AMMONIA-ALUM POWDERS.

Burnt ammonia-alum powders have been protected in every stage of their development by the patent-offices and courts of all the civilized nations and are cordially recommended by such authorities as Doremus, Wyatt Holland, Sutton, Fundicum, Patrick, Charles Doremus, Knights, Rosengarten, Tidy and Silliman.

The fifth and sixth propositions have been answered in the replies to the other four. It is well, however, to notice the malice and dishonesty of the Royal in treating its competitors.

It invariably alludes to acid phosphate as lime powders, in order, of course, to give the impression that they contain lime, or quick-lime. It states that every doctor and chemist denounces lime powders, when as a matter of fact they have opposed the presence of lime as an impurity in such powders (which is the case with the Royal) and when every physician and scientist who has given an opinion has praised and recommended the pure acid phosphate powders.

It describes burnt ammonia-alum as ordinary alum and, like a pettifogger, fits statements concerning potash-alum simple and plain to ammonia-alum baking powders. With persistent trickery it distorts and changes official reports and investigations and imposes its worthless adaptations and misquotations upon the public as the gospel truth. With consummate effrontery it advertises itself as a health-giving article, when every physician and text-book pronounces its residues as injurious to health. It even goes so far as to take adverse reports and opinions by scientists it cannot purchase, cut away the context and apply them to the disparagement of their competitors and to their own consequent advantage.

Horsford's
ACID PHOSPHATE.

A preparation of the phosphates of lime, potash, magnesia and iron, and phosphoric acid, in solution, that is readily assimilated.

Especially recommended in all cases where the use of phosphoric acid or the phosphates is indicated, such as exhaustion of the physical, nervous and cerebral systems, gastric and liver derangement, gravel, and other calcareous deposits, cholera, scurvy, consumption, etc.

As a menstrum for the administration of strychnina, morphina, quinina, and other organic bases which are usually exhibited in acid combination, it is unsurpassed.

It makes a delicious drink with water and sugar only, and harmonizes with such stimulants as are necessary to prescribe.

Dr. G. F. WILBER, Nashua, N. H., says: "It is a very elegant method of using phosphorus."
Dr. T. C. SMITH, Charlotte, N. C., says: "I attach the highest importance to it as a therapeutic agent, of well-defined and specific value."
Dr. C. EARLE, Pontiac, Mich., says: "I do not hesitate to recommend it to the confidence of the profession."
Dr. T. B. PORTER, Freeport, Ill., says: "It is an excellent therapeutic agent."
Dr. I. W. MARTIN, Des Moines, Ia., says: "I take pleasure in adding my testimony as to its therapeutic value."
Dr. E. BROWN, Omaha, Neb., says: "I find it a very useful remedy."

Send for descriptive circular. Physicians who wish to test it will be furnished a bottle on application, without expense, except express charges. Prepared under the direction of Prof. E. N. HORSFORD, by the

Beware of Substitutes and Imitations. RUMFORD CHEMICAL WORKS, PROVIDENCE. R. I.

YELLOWSTONE NATIONAL PARK, PACIFIC COAST AND ALASKA.

The Yellowstone Park is unquestionably attracting more attention at the present time, as a tourist resort, than any other place on the face of the earth. This spot is reached by rail only by the Northern Pacific Railroad, the famous dining-car line to the Pacific Coast, the only one of the transcontinental lines running dining cars of any description whatever. A book ticket will be sold at the Eastern terminals of the Northern Pacific for $110, including rail and stage transportation, meals on dining cars, Pullman and five day's accommodations south of Livingston in the Park.

The Alaska tour is also one that is attracting wide attention. The rates and facilities offered for making this trip are better via the Northern Pacific Railroad than by any other line. The attractions offered *en route* via the Northern Pacific, such as the ride through the Lake Park region of Minnesota, by the great wheat fields of Dakota, along the Yellowstone River and Clark's Fork of the Columbia, through the famous Spokane Falls region, over the Cascade Range, by the Palisades of the Columbia, Puget Sound, etc., together with the superior accommodations offered, make a trip by this route especially enjoyable. By writing Charles S. Fee, General Passenger Agent, M. P. R. R., St. Paul, Minn., you will receive copy of "Wonderland" and other books descriptive of the Yellowstone Park, Alaska and the country in general traversed by the "Dining Car and Yellowstone Park route."

TESTING WATER.—Electricity is to be enlisted in the investigation of the purity of water. The voltameter fails to show any current passing through chemically pure water. As saline or acid contamination increases the conductivity of the medium becomes greater.

OUR SPECIALTIES ARE

Choice Bottled Ciders

—AND—

Pure Cider Vinegar,

For Hotel and First-Class Trade.

T. P. ROGERS & SON,

370 to 376 Washington Street,

NEW YORK.

Good Agents

To obtain Subscriptions for

AMERICAN * ANALYST

WANTED ON LIBERAL TERMS

$85 Solid Gold Watch Free !

This splendid, solid gold, hunting-case watch, is now sold for $85; at that price it is the best bargain in America; until lately it could not be purchased for less than $100. We have both ladies' and gents' sizes with works and cases of equal value. **ONE PERSON** in each locality can secure one of these elegant watches absolutely **FREE.** These watches may be depended on, not only as solid gold, but as standing among the most perfect, correct and reliable timekeepers in the world. You ask how is this wonderful offer possible? We answer—we want one person in each locality to keep in their homes, and show to those who call, a complete line of our valuable and very useful HOUSEHOLD SAMPLES; these samples, as well as the watch, we send ABSOLUTELY FREE, and after you have kept them in your home for 2 months, and shown them to those who may have called, they become entirely your own property; it is possible to make this great offer, sending the **Solid Gold Watch** and large line of valuable samples FREE, for the reason that the showing of the samples in any locality, always results in a large trade for us; after our samples have been in a locality for a month or two, we usually get from $1,000 to $5,000 in trade from the surrounding country. Those who write to us at once will receive a great benefit for scarcely any work and trouble. This, the most remarkable and liberal offer ever known, is made in order that our valuable Household Samples may be placed at once where they can be seen, all over America; reader, it will be hardly any trouble for you to show them to those who may call at your home, and your reward will be most satisfactory. A postal card, on which to write us, costs but **1** cent, and if, after you know all, you do not care to go further, why no harm is done. But if you **do** send your address at once, you can secure, FREE, AN ELEGANT **$85,** SOLID GOLD, HUNTING-CASE WATCH and our large, complete line of valuable HOUSEHOLD SAMPLES. We pay all express, freight, etc.

Address, STINSON & CO., BOX 356 PORTLAND, MAINE.

LEA & PERRINS' SAUCE.

Lea & Perrins', the original and genuine Worcestershire Sauce, has been before the public over a half a century. Like all popular favorites it has long been the standard of comparison and the pattern for counterfeiters who not being able to imitate its excellence offer to the public imitations in bottling, labels and style of putting up. They dare not counterfeit the signature of Lea & Perrins which is on the red label of every genuine bottle, and of which this is a facsimile.

Lea & Perrins

To be sure of obtaining the genuine article, see that the above signature is on the label.

ANALYZE "MONON" Resolutions ! ?

Whereas, The Monon Route wishes to make known to the world that it has the finest system of Pullman Buffet Sleepers and Chair Cars, running between Chicago and Louisville, or Chicago, Indianapolis and Cincinnati;

And Whereas, This makes it in fact the double connecting link of Pullman travel between the winter cities of Florida and the northern summer cities; then

BE IT RESOLVED, That, before starting on a trip, be sure and address E. O. McCormick, Gen'l Pass. Agent, 185 Dearborn Street., Chicago, for rates, etc.

Natural Lithia Water.

FARMVILLE LITHIA WATER

FROM VIRGINIA.

—*Not only Relieves, but*—

CURES

Bright's Disease, Kidney Troubles of all Kinds, Rheumatism, Rheumatic Gout, Dyspepsia, Bladder Troubles, Diabetes, Calculi, Albuminuria. Without Taste or Odor. An Unapproachable Record in Results.

Sold by HAZARD, HAZARD & Co., Fifth Avenue Hotel, and other first-class Pharmacists. Pamphlet free upon application.

FARMVILLE LITHIA SPRINGS CO.,

298 Broadway, New York, and Philadelphia.

RAILWAY PROGRESS.—It has been stated that railway trains in England are now driven at an average speed 14 per cent. higher than it was twenty years ago, with scarcely more than half the quantity of coal.

HARD DRILLS.—A workman in the Carton mint has discovered that drill points, heated to a cherry red and tempered by being driven into a bar of lead, will bore through the hardest steel or plate glass without perceptibly bluntin.g

FLIES, FLEAS AND SAWDUST.—According to a Chicago philosopher, flies are the revivified souls of blossoms, which fall to the ground, decay, and come forth flies. There is not much poetry about the origin of the flea, for his mother is sawdust, mainly fine saw dust.

OUR MISSION.

WHAT THE AMERICAN ANALYST IS DOING.

FIGHTING ADULTERATION.

The steadily growing favor which the AMERICAN ANALYST is constantly receiving at the hands of both the reading and the business public is the best evidence that could be afforded of the useful field of effort it occupies. It was the pioneer journal in this country to take up the fight against adulteration, and stands to-day, by public acknowledgment, the only competent exponent of the principles involved in that momentous struggle. To this end the realm of sophistication and fraud has been thoroughly explored, and its corruptions, as far as practicable, exposed to the public view. Charlatans, adulterators, and handlers of poisonous food have been summarily and uncompromisingly dealt with. Humbugs seeking to enrich themselves, through the sale of high-sounding specifics for human ailments, have been subjected to the crucial test of thorough chemical analysis of their goods, and where the latter, as too frequently occurred, proved to be utter frauds in name, composition, and pretended effects upon the system, the real facts have been placed before our readers in order to save the public from further unconscious imposition. The veil of chemical mystery in which tricksters of this kind ostentatiously envelop their processes of manufacture, protects them as yet from the criminal laws to which other confidence operators are held amenable, and the only method for counteracting their nefarious schemes is through public exposure by the newspaper press. In exposing this species of fraud, the AMERICAN ANALYST has conferred a benefit upon the community, to which the latter is giving grateful and substantial recognition.

SANITARY AND FOOD REFORMS.

In addition to the foregoing, the AMERICAN ANALYST is in constant co-operation with the Boards of Health of this and other cities, in efforts to secure sanitary and food reforms through organized methods, and while it is nobody's mouthpiece, it is conceded to be the only popular medium through which those bodies can bring their purposes and action intelligently before the general public. Reaching as it does all classes, manufacturers, merchants, physicians, chemists and private families all over the land, its influence is exerted over a vast radius, producing results as visibly marked as they are widespreading.

HOUSEHOLD MATTERS.

"Domestic Dietetics" is a department of special interest to ladies. It is very different and far superior to the ordinary cook book in that it tells the housewife suggestively what to buy, what foods are in season, as well as how to prepare the many varieties of dishes, all in a practical way easily followed. Other matters of great interest to housewives are also discussed.

PRACTICAL DISCUSSIONS.

Numerous other interests are also faithfully represented in our columns, such as the regular series of articles entitled, "Some Every Day Suggestions," relating to common experiences of society, the question of hygiene, and an infinite variety of practical subjects. In short, the AMERICAN ANALYST always keeps abreast in giving the fullest information on all matters directly or indirectly in the line of its proper field.

SCIENTIFIC INVESTIGATION.

The business transacted in the office of the AMERICAN ANALYST does not by any means all come to the surface in the pages of the paper. Minute analyses of chemical compounds, careful assays of minerals, examinations of questionable oils or doubtful condiments, and the many subtle operations incident to laboratory work are constantly required of us by correspondents far and near, and the results in many cases are not publicly recorded. In this manner, the influence of the paper encompasses a vast radius, from every point of which we receive constant expressions of approval, verbally, and in more substantial shape.

SUBSCRIPTION $1 PER YEAR.

Considering the amount of practical information regularly embodied in its contents, together with the fact that the subscription price for an entire year is only one dollar we believe the day is approaching when the AMERICAN ANALYST will be regularly welcomed in every intelligent household in the land. Address,

ANALYST PUBLISHING CO.,

19 *Park Place, N. Y.*

THE TORSION

Braided Wire Mattress.

At all times a thoroughly ventilated and perfectly clean mattress, it cannot absorb odors, or retain exhalations or disease germs.

D. HAYES AGNEW, M. D., Prof. of Surgery, University of Pennsylvania, says:

"The Torsion Braided Wire Pillow and Mattress I regard as superior to anything of the kind now in use; well suited for either private or hospital use.

Prof. WM. H. PANCOAST, late Professor of Anatomy, etc., in Jefferson Medical College, now Professor of Anatomy and Clinical Surgery in the Medico-Chirurgical College of Philadelphia Hospital Surgeons, says:

"I have used in my surgical practice your Braided Wire, in the form of mattresses, pillows for the head and body, and short pillows for the arm and leg when injured. I find them most admirable, cool and light, yet affording perfect and elastic support.

I have saved a patient from bed sores by the use of the Braided Wire mattress."

WM. H. FORD, President Board of Health, Philadelphia, says:

"I have used the Torsion Braided Wire Mattress with great satisfaction, it is light and therefore easily handled; it is elastic and very comfortable. The case can be easily removed to afford a complete airing, a feature of great importance from a health point of view.

It is an invention of great usefulness.

For descriptive circular and price list, send to

The Torsion Braided Wire Upholstering Company,

1017 CHESTNUT ST., PHILA.

"BILLET"

are

Carefully Selected

French Sardines,

Packed in Choicest Olive Oil.

AT ALL LEADING GROCERS.

Any Retail Druggist in the United States who desires to obtain Advertising Matter, Show Cards, Signs, etc., which will assist and instruct him in the sale of Harriet Hubbard Ayer's Recamier Toilet Preparations and Vita Nuova, should address THE RECAMIER MFG. CO., 52 and 54 Park Place, New York City.

UNEQUALLED Ask your Grocer for, and insist on having, **LEA & PERRINS'** Sauce, "The Worcestershire." It is known throughout the whole civilized world as the Best and most Delicious Sauce. **DELICIOUS.**

SCOTCH MARMALADE, Jams, Fruit and Wine, Jellies, &c.
By James Keiller & Son, Dundee.

SCOTCH BISCUITS, Albert, Water, and Oat Cake,
By Robert Middlemass & Son, Edinburgh.

RACAHOUT des Arabes, by De Langrenier, Paris.

BAY WATER, West India, (J. D. S. brand), in cases, one dozen bottles.
Sold by all first-class Grocers.

JOHN DUNCANS' SONS, 43 Park Place, New York. Agents for the United States.

Robert Gordon's
TRADE MARK.

SPICED · SEA · FOODS

(IN GLASS.)

OYSTERS, LITTLE NECK CLAMS, MUSSELL, SHRIMP, LOBSTER, Etc.,

Packed in 8 and 16 oz. Jars. Guaranteed to be strictly Pure.

MADE OF THE FINEST MATERIALS.

—ALSO,—

ROBERT GORDON'S CONDENSED CLAM CHOWDER,
In 3-lb Cans. Cheapest and Best in the Market.

MANUFACTURED BY

JONES, GORDON COMPANY, Limited,
204 West Street, New York.



GOLD MEDAL, PARIS, 18[illegible]
BAKER'S
Breakfast Cocoa.
Warranted *absolutely pure Cocoa,* from which the excess of Oil has been removed. It has *three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup.* It is delicious, nourishing, strengthening, easily digested, and admirably adapted for invalids as well as for persons in health.
Sold by Grocers everywhere.
W. BAKER & CO., Dorchester, Mass.

Sura Cura
ROBINSON'S
SURE CURE
FOR
RHEUMATISM
And NEURALGIA,
And remedy for diseases arising from an impure state of the blood. An antidote for **MALARIA.** Price 50 c. and $1. Sent by mail on receipt of price. Send for Circular.
R. W. ROBINSON & SON,
184 Greenwich Street,
NEW YORK.
Sura Cura

ESTABLISHED 1857.

J. H. CUTTER,

OLD

BOURBON AND RYE WHISKIES.

We are the Sole Owners and Proprietors of this Celebrated Brand of Whiskey.

C.P.MOORMAN & CO. **LOUISVILLE, KY.**

We Guarantee the Superior Quality and Absolute Purity of every Barrel of Whiskey sold by us under this Brand.

W. P. FESSENDEN. Agent for N. E. States, Maryland and Penn., 11 Central St., Boston.

Good Subscription Agents wanted by AMERICAN ANALYST.

ESTABLISHED 1823.

ALEX. YOUNG CO., Limited,

DISTILLERS OF

Y. P. M. WHISKIES.

DISTILLERY, - - - Nos. 408, 410, 412 and 414 South Street.
MALT HOUSE, - Nos. 416, 418, 420, 422 and 424 South Street.
STORE, - - - - - - - - - - No. 700 Passyunk Avenue.

PHILADELPHIA, PA.

FOR SALE BY

PARK & TILFORD, and ACKER, MERRALL & CONDIT,

NEW YORK.

THE LABORATORY.

To Inventors, Manufacturers and Applicants for Patents

The AMERICAN ANALYST may be consulted upon all matters involving theoretical or applied chemistry. Advice and opinions given. Analyses and assays made. Patents perfected and secured. Terms reasonable.

Address, AMERICAN ANALYST,
19 Park Place, N. Y.

A SET BACK TO ALL PREVIOUS INVENTION.

EDUCATION Quick vs. Old System **Dead.** Education almost by machine process. As mind is above matter so is this method (simply by seven words) above all previous invention of whatever kind. **A Wherewithal Book, $1.00 Form.**
We **guarantee** you will be more than **satisfied.**
If you want this method remit $1.00 by Registered Letter or send Check and receive by mail a great **possibility** from the sole originators and proprietors of the **New Education,**
WHEREWITHAL COMPANY Philadelphia, Pa.

Ask Grocers for our Patent Barley **CRYSTALS,** a new, unrivalled **Cereal Food,** for Breakfast Tea & Dessert. If not sold there, write us for free samples. **GLUTEN FLOUR** and **SPECIAL DIABETIC FOOD** are invaluable waste-repairing flours for **Dyspepsia, Diabetes, Debility & Children's Food.** No bran; mainly free from starch. For all family uses nothing equals our **HEALTH FLOUR.** Send for circular offering 4 lbs. free.
FARWELL & RHINES, Props., Watertown, N.Y

KEITH'S

CON. TINC. AVENA SATIVA

(FROM COMMON OATS.)

WITHOUT ADMIXTURE OF ANY KIND.

A Powerful Nerve Stimulant, Tonic, Etc.,

WAS FIRST offered to the medical profession by B. KEITH & Co., in 1881, as a remedy to be employed in the treatment of

Paralysis, Epilepsy, St. Vitus' Dance, the Morphia or Opium Habit, Chloral and Tobacco Habits, Sleeplessness, Nervous Debility and Exhaustion, Neuralgia, Alcoholism Painful and Deficient Menstruation, Headache, Hysteria, Impotency, Convulsions and Prostration from fainting, and in the Convalescent stage of all Acute Diseases.

DOSE.—From ten to thirty drops, or more, as often as may be indicated to meet the urgency of the case. Administer in hot water when quick action is desired.

AN OVERDOSE CAUSES PAIN AT BASE OF BRAIN.

—) WE MAKE ONE QUALITY ONLY (—

Price,
2 oz., 45c.; 4 oz., 75c.; 8 oz., $1.35; 16 oz., $2.50

B. KEITH & CO.,
75 William Street, N. Y.

Subscriptions $1 per year. Now is the time to subscribe.

BOVININE, BUSH'S FLUID FOOD,

Is the ORIGINAL and ONLY preparation of RAW FOOD that does not become putrid and disgusting in a short time.

A MOST WONDERFUL NUTRIENT.

The vital principles of Beef and Mutton concentrated. A highly condensed Raw Food Extract. Acceptable to the most delicate taste and smell. Retained by delicate stomachs that reject all other foods It assimilates more readily than any other food known to the medical profession. Bovinine under the microscope shows the blood corpuscles in their normal condition strongly marked, while in other foods or extracts this vitally important element is destroyed by the action of heat in cooking.

Containing 26.58 Per Cent. of Soluble Albuminoids,

According to OSCAR OLDBERG, Ph.D., Professor of Chemistry and Toxicology, and Dean of the North-Western College of Pharmacy.

A. L. LOOMIS, M. D., Professor in Medical Department of University of New York, says: "I prescribe Bush's Fluid Food or BOVININE, and prefer it to similar preparations."

J. S. JEWELL, M. D., Chicago, says of Bovinine: "I am delighted with it; it is what I have been looking for these twenty years, and it supplies a want that nothing else has been able to fill."

DRS. WARD and FRED. SMITH, speaking for themselves and their colleagues of the Hospital of St. Barnabas, Newark, say: "Bovinine was readily taken by the patients, was easily retained, and in many cases by stomachs which had rejected all other forms of nourishment. We believe Bovinine contains more nutriment, relative to the bulk, than any other preparation known to the medical profession."

"During the last four months of his sickness, the principal food of my father, General Grant, was Bovinine and Milk; and it was the use of this incomparable food alone that enabled him to finish the second volume of his personal memoirs.—FRED. D. GRANT."

October 1st, 1885.

Carefully prepared from the formula of the late James P. Bush, by the J. P. Bush Manufacturing Co., 44 Third Avenue, Chicago, Ill.

PUT UP IN 6 AND 12 OUNCE SIZES, AT 60c. AND $1.00 PER BOTTLE.

For Sale by all Druggists.

Principal Office, 2 BARCLAY STREET, NEW YORK CITY.

CALIFORNIA
Fine Table Wines
From our Celebrated Orleans Vineyard.
Groad Barnsdhy & Co
Producers of the
ECLIPSE
CHAMPACNE,
530 Washington St.
SAN FRANCISCO.
PARK & TILFORD. New York,
C. JEVNE & CO., - - Chicago, } Agents.


FACIAL BLEMISHES.
the Largest Establishment in the World for their Treatment. Facial Development, Hair and Scalp, Superfluous Hair, Birth Marks, Moles, Warts, Moth, Freckles, Wrinkles, Red Nose, Acne, Pimples, Bl'k Heads, Scars, Pitting, etc., and their treatment. Send 10c. for book of 50 pages, 4th edition.
Dr. JOHN H. WOODBURY,
37 North Pearl St., Albany, N. Y.
Established 1870. Inventor of Facial Appliances, Springs, etc. Six Parlors.

THURSTON'S IVORY PEARL TOOTH POWDER
WILL KEEP THE TEETH IN PERFECT CONDITION AND THE GUMS HEALTHY.
Price 25 & 50 Cents PER BOTTLE

HORTON, CATO & CO.'S
ROYAL SALAD DRESSING.
TRADE MARK.
HORTON, & Co. CATO & CO.
DETROIT, MICHIGAN.
A SUPERIOR DRESSING FOR LOBSTER, CHICKEN AND ALL SALADS, ALSO COLD MEATS, SALMON, LETTUCE, TOMATO SALADS, CABBAGE, ETC. MANUFACTURED WITH GREAT CARE FROM WHOLESOME, PURE AND CHOICE CONDIMENTS. NONE GENUINE UNLESS BEARING OUR TRADE MARK AND SIGNATURE.
Horton, Cato & Co
DETROIT, MICH.
"ROYAL" SALAD DRESSING.
The best prepared Dressing, always fresh, does not turn oily, rancid or decompose as other dressings of a similar nature.
"ROYAL" WORCESTERSHIRE SAUCE,
The Peer of American Product.
HORTON, CATO & CO.,
SOLE PROPRIETORS AND MANUFACTURERS,
DETROIT, MICH.

A RICH PRESENT FOR YOU! We have purchased for one-fourth the original actual cost, a large quantity of elegant Papeteries, each one filled with the very choicest quality of Fashionable Linen Note Paper and Envelopes, in beautiful assorted tints, with pens, penholder, sealing wax, etc., to match. The regular retail price of some of these Papeteries is $3.00, others are worth $1.50 to $2.50 each, while the cheapest one has never been sold at less than 60 cents, and a great bargain at that price. They are all very handsome and really valuable. We shall, for the next two months, send one of these Papeteries, carefully packed and fully post-paid, to every one who sends us ONLY ONE DOLLAR to pay for a full year's subscription to DRAKE'S MAGAZINE. The best Papeteries will be sent to those who subscribe first, and it will be "First come best served." All subscriptions will begin with the latest number out. DRAKE'S MAGAZINE is 64 pages and handsomely bound, each number is complete in itself, and has from 15 to 25 handsome illustrations. It has special departments to interest ladies and children, and entertaining matter for everyone. Every article in it is written expressly for it by the best authors. No other magazine of equal value is sold at less than 20 cents per copy, or $2.00 per year, yet we will send you DRAKE'S MAGAZINE a whole year and a BEAUTIFUL PAPETERIE filled with fashionable Stationery, all for One Dollar. A one dollar bill will go safely in the mails. Cut this advertisement out. It may not appear again. Address, DRAKE'S MAGAZINE,
31 Mercantile Exchange, New York City.

MALTED MILK
THE ONLY FOOD
For Infants and Invalids
THAT CONTAINS ALL THE ELEMENTS OF NUTRITION, WITHOUT A SINGLE ADDITION.
MALTED MILK does not have to be cooked.
MALTED MILK needs no addition of milk, only to be stirred up with water, which can be done without the slightest fuss or trouble.
MALTED MILK will not spoil in hot weather.
MALTED MILK is always ready for immediate use night or day, when traveling or at home.
MALTED MILK does away with the danger of using sour or impure milk.
MALTED MILK is free from starch and cane sugar. All foods that have to be cooked contain starch.
Ask your physician his opinion of MALTED MILK he knows all about it.
Price, . . . 50 Cts. | Large Size, . $1.00
Extra Large Glass Jars for hospital and family use, ... $3.75
These contain five times the quantity of the $1.00 bottles.
A sample bottle will be sent free to any Mother or Invalid sending their address to
MALTED MILK CO.
RACINE, WISCONSIN, U. S. A.

ON THE USE OF PURGATIVES.

BY CHARLES A. HOFF, M. D., ST. LOUIS, MO.

Of all preparations contained within the *pharnacopœia,* there are none, apparently, held in higher esteem by mankind than that class of medicines, commonly known as purgatives The busy practitioner confidently prescribes them with variable frequency, singly and combined, from the date of the writing of his very first prescription to that of his last; and the corner druggist rarely sees a day pass over his head on which he does not greet the customer who has called around to get "something to act upon his bowels." Indeed, the inevitable purgative awaits the tiny baby screaming in its first attack of colic; it is resorted to by the invalid weighted down with years of suffering and disease; and it is by no means despised by the individual in robust health, when assailed by the various petty ills, which even the most vigorous seldom entirely escape.

Notwithstanding the fact that purgatives are so generally prescribed by the physician, and so frequently resorted to without advice by the patient, they are not altogether incapable of doing harm. As everybody knows, the habit of purging the system repeatedly with salines, cholagogues, hydragogues, or drastics, is a most pernicious one; and the physician who fails to exercise a proper care, both in the selection and the administration of cathartics will sooner or later bankrupt the health of his patients as well as his own hard earned reputation.

Constipation is a complication of so many disorders, a symptom of so many diseases that its treatment in different cases depends upon very different considerations. For a simple, ordinary attack, the average doctor has been accustomed to use a simple purge, such as castor oil, sulphate of magnesia, rhubarb, senna, aloes, colocynth, blue pills, etc.; yet in none of these, can it be truly said, has there been found all that could be wished for, even in so simple a matter as a laxative. Where can we find the physician who has not been vexed and annoyed at the complaints of his patients against the purgative medicines he has been accustomed to prescribe. Some people there are who can not or will not swallow pills; many object to the nauseating castor oil; not a few oppose the use of salines since they are disagreeable both in taste and effect; many look upon all resinous cathartics as objectionable on account of their so called heating properties; aloes is objected to in pills and especially in pregnancy; elaterium is said to be excessively harsh and severe, croton oil is known to be dangerous; podophyllin causes an undue amount of griping; blue mass is avoided on general principles; and so on to the end of the chapter.

Fortunately, however, the physician of the present need no longer be placed in a dilemma when called upon to prescribe a preparation free from the faults enumerated in connection with ordinary purgatives. The pharmacist has bravely come to his aid with a formula of incomparable excellence; and this preparation, a combination of "manna, purified cathartic acid and fruit juice," although but recently brought to the notice of the medical world, is, nevertheless, already regarded as a most valuable addition to the resources of medicine.

The happy thought that suggested the combination known as the Rio Chemical Co.'s Acid Mannate justly challenges unlimited admiration and esteem, and has thus far evoked from the profession an almost universal verdict of commendation and praise. Prompt, mild and certain in its action, Acid Mannate may well be considered an ideal remedy in the constipation of pregnancy. Being pleasant to the taste, and continuing its good work without increased dosage, it is pre-eminently adapted to cases of habitual constipation. Indeed, in its wide range of adaptability as an aperient medicine it is impossible to exaggerate its importance, or allude either directly or indirectly to the vast variety of its beneficial, therapeutical properties.

The importance of laxatives is probably nowhere appreciated so much as in the constipation of pregnancy; and it is to this fact, no doubt, more than to any other, that Acid Mannate owes its great popularity and fame among remedial agents. The testimony of thousands of honorable medical gentlemen leading us to believe that, through the beneficent effect of this same elegant formula, constipation need not hereafter, as in the past, be regarded as one of the most troublesome attendants upon gestation. Moreover, the atrocious female pill of unknown composition but of dire effect, which has deluged the drug market for ages, we may consider as having had its day; and it is to be hoped that, since the physician is now in possession of a purgative especially suited to the period of gestation, female life will be less frequently harassed by the ails and aches said to be peculiar to the sex; and that miscarriages, displacements, granular erosions, congestions, headaches, dyspeptic and hypochondriacal attacks, and the whole long train of aches, pains and nervous ills will grow less familiar to the medical profession in the same ratio that the physician increases his familiarity with the actions of Acid Mannate.

A full siz d bottle of Acid Mannate will be sent free to any Physician who desires to test it, if he will pay the express charges and mention this Journal, on application to the

RIO CHEMICAL CO.,
St. Louis, Mo

J. HENRY HENTZ. J. P. ROBINETT. J. HENRY HENTZ, Jr.

ESTABLISHED 1793.

WHITE, HENTZ & CO.,

SOLE PROPRIETORS OF

Trimble and Pennsylvania Monogram Whiskies.

222 and 224 NORTH SECOND ST., PHILADELPHIA.

D. LIEBER, 17 South William St., New York. Col. H. A. SELIGSON, 1200 Pennsylvania Ave., Washington, D. C.

NATRONA BI-CARBONATE OF SODA.

(ABSOLUTELY PURE.)



The nature of the raw material from which NATRONA BI-CARBONATE OF SODA is made—viz., kryolith, a mineral containing *pure sodium*—insures a purity and uniformity of product which cannot be obtained from any other known material. In making BI-CARB. SODA from any other raw material, the use of sulphuric acid is a necessity, but none is used in any part of the process of making NATRONA BI-CARB.; hence its entire freedom from the slightest trace of arsenic, which is always present in ordinary soda. Its absolute purity and entire freedom from all traces of *sulphats of soda*, common salt and other impurities, render NATRONA BI-CARB. NEARLY TASTELESS, and being bolted through the finest bolting-cloth, insures the finest stage of division.

To these indisputable facts the attention of CONSUMERS of soda is specially called. They are IMPORTANT, and should influence both those who use and those who sell soda, to buy and sell NONE BUT THE BEST.

The NATRONA BI-CARB. Soda is kept in stock by almost every wholesale druggist and grocer throughout the United States, of whom it may be ordered.

Natrona Bi-Carb. Soda is unequaled by any other brand of English or American Manufacture.

PENNA. SALT MANUFACTURING CO.,

NATRONA CHEMICAL WORKS. PHILADELPHIA, PA.

ALTHENE SKIN SOAP

An absolutely pure and perfect soap for all purposes of the toilet, nursery, bath or sick-room. Has the approval of leading chemists and physicians, and is recommended by all who have used it. Price 25 cts. a cake, or 65 cts. for a box of three. Can be obtained of the retail druggists or from

J. W. CAMPION & CO., 916 Filbert Street,

PHILADELPHIA.

GOLD You can live at home and make more money at work for us than at anything else in the world. Either sex; all ages. Costly outfit FREE. Terms FREE. Address, TRUE & CO., Augusta, Maine.

TO ADVERTISERS!

FOR a check for $20 we will print a ten-line advertisement in One Million issues of leading American Newspapers and complete the work within ten days. This is at the rate of only one-fifth of a cent a line, for 1,000 Circulation! The advertisement will appear in but a single issue of any paper, and consequently will be placed before One Million different newspaper purchasers; or FIVE MILLION READERS, if it is true, as is sometimes stated, that every newspaper is looked at by five persons on an average. Ten lines will accommodate about 75 words. Address with copy of Adv. and check, or send 30 cents for Book of 256 pages.
GEO. P. ROWELL & CO., 10 SPRUCE ST., NEW YORK.

We have just issued a new edition of our Book called "Newspaper Advertising." It has 256 pages, and among its contents may be named the following Lists and Catalogues of Newspapers:—
DAILY NEWSPAPERS IN NEW YORK CITY, with their Advertising Rates.
DAILY NEWSPAPERS IN CITIES HAVING more than 150,000 population, omitting all but the best.
DAILY NEWSPAPERS IN CITIES HAVING more than 20,000 population, omitting all but the best.
A SMALL LIST OF NEWSPAPERS IN which to advertise every section of the country: being a choice selection made up with great care, guided by long experience.
ONE NEWSPAPER IN A STATE. The best one for an advertiser to use if he will use but one.
BARGAINS IN ADVERTISING IN DAILY Newspapers in many principal cities and towns, a List which offers peculiar inducements to some advertisers.
LARGEST CIRCULATIONS. A complete list of all American papers issuing regularly more than 25,000 copies.
THE BEST LIST OF LOCAL NEWSPAPERS, covering every town of over 5,000 population and every important county seat.
SELECT LIST OF LOCAL NEWSPAPERS, in which advertisements are inserted at half price.
5,472 VILLAGE NEWSPAPERS, in which advertisements are inserted for $42.15 a line and appear in the whole lot—one-half of all the American Weeklies



Book sent to any address for THIRTY CENTS.

THE FINEST MADE
COLBURN'S
PHILADELPHIA
MUSTARD
KING OF CONDIMENTS

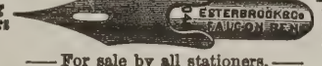
OPIUM AND LIQUOR HABIT CURED.

WE solicit an investigation of our system and methods, and will gladly send to any one very interesting matter on the OPIUM HABIT DRUNKENNESS and their effects and cure. Physicians specially invited to examine, and if desirous of trying our remedies, liberal arrangements will be made with them.

THE LESLIE E. KEELEY CO., Dwight, Illinois.

ESTERBROOK'S STEEL PENS

Leading Numbers



14,048,128
130, 135,
333, 161.

—For sale by all stationers.—

THE ESTERBROOK STEEL PEN CO., 26 John St., N. Y.
WORKS CAMDEN, N. J.



These Goods are "Par Excellence,"

Pure, Healthful and Reliable, warranted to give satisfaction in every particular. For sale by wholesale and retail grocers throughout the United States. VOUWIE BROS., Manufacturers, CLEVELAND and CHICAGO.

A BUSINESS BENEFIT.

ADVANTAGES TO ADVERTISERS OFFERED BY THE AMERICAN ANALYST.

It has not the limitations of a daily paper. No one reads yesterday's paper. A monthly lives at least a month, while a semi-monthly is fresh twice a month, and its audience is not limited by geographical lines, but the circulation is all over the United States and Canada.

It contains matters of interest to everyone, especially the ladies of the household, and is, therefore, sure of a careful perusal. Our audiences are intelligent and of the better classes, who have money to spend, and any well worded advertisement in our columns, giving real information, will receive a careful perusal.

Our rates are as low as our circulation affords. Large circulation and original matter cost money, and those advertisers who desire to realize these benefits must expect to pay reasonably for them.

Advertisements in our columns are permanent. Most of our subscribers bind their numbers.

Our advertisements are set up in an attractive form, sure to call the attention of the reader.

Anything that our readers want, or for which a demand is to be created, not wholly of a local nature, will pay to advertise with us.

We take only advertisements from legitimate houses of really meritorious goods, and give them all the editorial assistance they deserve; consequently our readers knowing this, have confidence in advertisements contained in our columns.

The fact that we have the best and largest houses in every branch of trade advertising with us, and that they always renew as their seasons arrive, proves beyond a doubt that they have found the AMERICAN ANALYST a good advertising medium. Why should not you?

PEACOCK'S BROMIDES

(SYR: BROM: COMP: PEACOCK)

NERVE SEDATIVE.

Each fluid drachm represents 15 grains of the Combined C. P. Bromides of Potassium, Sodium, Calcium, Ammonium and Lithium.

USES:—EPILEPSY, and all CONGESTIVE, CONVULSIVE, and REFLEX NEUROSES.

This preparation has stood the test of time and experience, and can be relied upon to produce results, which can not be obtained from the use of commercial bromide substitutes.

DOSE:—One to two FLUID drachms, in WATER, three or more times a day.

PEACOCK CHEMICAL CO., St. Louis.

CARL L. JENSEN'S
CRYSTAL PEPSIN TABLETS

FOR DYSPEPSIA OR INDIGESTION.



CARL L. JENSEN'S CRYSTAL PEPSIN has been known throughout the world for the last ten years among the medical profession only. But a medical preparation of such high value as this could not be kept exclusively within the power of the physicians without permitting the public to become familiar with CARL L. JENSEN'S CRYSTAL PEPSIN, which they have so often seen mentioned in prescriptions from their physicians, and from which preparations they have received such gratifying results. That the public have availed themselves of this knowledge is manifested from the fact that the demand at the drug stores of late for CARL L. JENSEN'S CRYSTAL PEPSIN has become so urgent that we have been repeatedly requested by the Druggists at large to put up the PEPSIN in a more convenient form for their customers who demand JENSEN'S CRYSTAL PEPSIN without bringing a prescription. This PEPSIN, to suit the prescription department, is put up in loose Crystals or Scales, and therefore not in a suitable manner to be handled by the public. It is therefore, for the convenience of the public, prepared in tablet form, of which one or two constitute a dose, and put up in small bottles of convenient form to be carried in the pocket, each bottle containing seventy-five tablets.

CARL L. JENSEN,

SOLE MANUFACTURER,

2039 Green Street, Philadelphia, and 161 West 23d Street, New York.

KEPT BY ALL DRUGGISTS.

ESTABLISHED 1841.



THE GREAT AMERICAN STORY PAPER,
—THE—
---YANKEE BLADE---

This wonderful family story paper is read every week by 400,000 people. It is a large, eight-page paper, every page filled solid full of interesting reading; stories of thrilling interest, adventure, love, the sea, detective tales, fireside stories, etc. Special articles on the Household Department, Ladies' Work, Boys' and Girls' Departments. The Famous Funny Columns of THE YANKEE BLADE are edited by SAM WALTER FOSS, the celebrated humorist. The circulation is rapidly increasing. Endorsed by the best people as suitable for everybody to read. Its reading matter is pure, and devoid of the slightest tinge of vulgarity. Don't fail to try THE YANKEE BLADE. You will be delighted with it. Comes every week. Our regular subscription price is $2 00 per year. **We offer it to new subscribers for only $1.00 a year, or 50 cents for six months.** We will send it three months for 25 cents. **If you will enclose 6 cts. extra, and mention this paper, we will send you FREE a Half Dozen Japanese Shifu Handkerchiefs** of Mikado paper, fibre silk, nearly half a yard square, in handsome designs, assorted. This is one of the greatest offers ever made by any reliable firm. Send at once. **Sent 2 years for $1.75.** THE YANKEE BLADE is for sale at all newsdealers, for 5c. per copy.



FREE TO SUBSCRIBERS.



POTTER & POTTER, Pubs. Yankee Blade, Boston, Mass.

We have examined the above-named paper and Japanese handkerchiefs, and find them to be a remarkable bargain. We can recommend them to all our readers.—Editor.

FOR THE ILL-EFFECTS
— OF —
Summer Heat, Heat Exhaustion.

Where after a prolonged exposure to a heated atmosphere you feel exhausted, depressed and tired mentally as well as physically, take a dessert spoonful of Bromo-Soda in half a glass of water, and drink while effervescing, when relief will be sure to follow.



A Cure for Sick Headache, Sleeplessness, Etc.

ASK FOR BROMO-SODA and TAKE NO SUBSTITUTE.

SWIFT'S

Choice Chicago Dressed Beef

—AND—

MUTTON.

CAN be found at all times in full supply and at popular prices at the branch houses in all the larger cities and is ***retailed by all first class butchers.***

The trade of all marketmen and meat dealers is solicited for our Wholesale Branch Houses, and the ***public may rest assured*** *that in* ***purchasing our meat*** *from dealers they will* ***always receive the best.***

SWIFT AND COMPANY,

UNION STOCK YARDS,

CHICAGO, ILLS.

Tabasco Pepper Sauce

OR LIQUID PEPPER.

Is simply the Pulp of the Ripe Pepper Extracted by Pressure.

The seed of this Pepper was obtained from Central America, and by careful cultivation in Louisiana for many years has been so improved in strength, flavor and aroma, as to have become a new variety of Red Pepper, superior to all others. The pulp is so handled as to retain all the flavor, strength, aroma and color of the ripe fruit, and to keep unimpaired in any climate. It excites the appetite, promotes digestion, and is pronounced, by connoisseurs, to be the finest condiment in the world. For medicinal purposes it recommends itself by its purity, strength and diffusible form.

Manufactured by E. McILHENNY,

NEW IBERIA, LA.

For Sale by all Wholesale Grocers.

CARNRICK'S SOLUBLE FOOD

IS UNLIKE ANY OTHER INFANT'S FOOD THAT HAS EVER BEEN PRODUCED.

℞

THE FORMULA.

Partially Predigested Milk Solids,	**45 parts.**
Wheat with the Starch converted into Dextrin,	**45 "**
Milk Sugar,	**10 "**

We do not claim this food to be "a **perfect** substitute for human milk." But we do claim that **Carnrick's Food approaches nearer to human milk in constituents and digestibility than any other food that has ever been produced**, and that it is the only infant's food that will, without the addition of cow's milk, thoroughly nurse a child from its birth.

We believe that **Carnrick's Food** solves the problem of a reliable substitute for human milk. The Caseine of cows' milk, by partial predigestion with freshly made Pancreatine, is rendered as easily digestible by the infant as human milk.

We have never published an analysis of **Carnrick's Food** "prepared with milk," for, unlike all other foods, it is prepared by the addition of water only, and we base our claim upon the intrinsic value of the food as compared with an equal amount of solid constituents of human milk. All other analyses or comparisons are misleading. We challenge similar comparisons with any other food, and confidently believe, that if **Carnrick's Food** is depended upon for the nutrition of infants, the great mortality among children will be reduced. Full information regarding the process of manufacture will be cheerfully furnished, and samples sent free to those who wish to test **Carnrick's Food.**

REED & CARNRICK, New York.

GORDON & DILWORTH

MANUFACTURING PURVEYORS

Established 1847

ALIMENTARY PRODUCTS

ALL OF OUR PRODUCTIONS BEAR THIS TRADE MARK

WE WILL PROSECUTE ALL INFRINGEMENTS & IMITATIONS



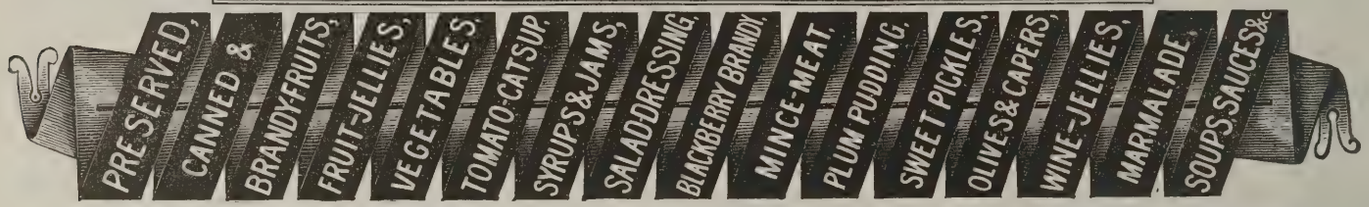




CHOICE DESSERTS

OVER 100 DOMESTIC & FOREIGN FRUITS AND VEGETABLES TRANSMUTED INTO TABLE DELICACIES

PRICES ON PRESERVED FRUITS REDUCED 1ST DEC. 1885



SOLD BY THE LEADING GROCERS ON THE AMERICAN CONTINENT.

GRAND NATIONAL PRIZE OF 16,600 FRANCS.

QUINA-LAROCHE

VINOUS ELIXIR,

A STIMULATING RESTORATIVE

AND

ANTI-FEBRILE TONIC.

This meritorious ELIXIR, QUINA-LAROCHE, is prepared from the three Cinchonas; it is an agreeable and doubtless highly efficacious remedy.—*The Lancet.*

QUINA-LAROCHE, under the form of a vinous Elixir, contains the totality of the numerous principles of the three Cinchona barks. It is a preparation which renders great services to Therapeutics.—Extract of the *Gazette des Hôpitaux*, Paris.

Far superior to all Ordinary Cinchona Wines.

LAROCHE'S QUINA, tried by the Academy of Medicine of Paris, is a specially prepared Compound Extract of Quinquina, a careful analysis, confirmed by experience, has shown that most of the wines and syrups hitherto used have not contained all the properties of this precious bark, of these some, although beneficial, are altogether lost, while many preparations contain but half the properties of the bark in varying proportions.

Mr. Laroche, by his peculiar method, has succeeded in extracting all the active principles of the quinquina, combining these with *Catalan Wine*, forming an Elixir free from the disagreeable bitterness of other similar preparations. Practitioners have found triple advantages in the use of this Elixir; it is a *strong tonic*, is easily administered, and perfectly harmless, being free from the unpleasant effects of Quinine.

THE FERRUGINOUS QUINA-LAROCHE is the invigorating tonic *par excellence*, having the advantage of being easily assimilated by the gastric juice, without, in any way, deranging the action of the digestive organs, proving itself to be a most efficacious remedy in cases of impoverishment of the blood, **Anæmia, Chlorosis, Intestinal Hemorrhage, Castralgia, Exhaustion,** etc., etc.

PARIS.—22 RUE DROUOT.—PARIS.

Laroche

E. FOUGERA & CO., New York, Sole Agents for the United States.

ARMOUR & CO.

CHICAGO, ILLS.

PACKERS OF

Pork and Beef Products

CANNED MEATS,

ETC.,

FOR HOME CONSUMPTION AND FOR EXPORT

TO ALL PARTS OF THE WORLD.

Also,

SHIPPERS OF

Choice Dressed Beef,

MUTTON AND HOGS,

In Refrigerator Cars,

To BOSTON,

NEW YORK,

PHILADELPHIA,

BALTIMORE,

And other cities throughout the country.

GREENWAY'S PORTER

—AND—

DOUBLE AND EXTRA DOUBLE STOUT.

GREENWAY'S INDIA PALE ALE.

IN GLASS OR WOOD

AMERICAN

TRADE MARK.

FULLY EQUAL TO THE BEST IMPORTED.

FOR FAMILY OR CLUB USE.

RECOMMENDED BY OUR BEST PHYSICIANS

FOR SALE BY ALL FIRST CLASS GROCERS AND DEALERS.

SEND FOR CIRCULARS.

THE GREENWAY BREWING CO.

SYRACUSE, N.Y.

Greenway Bottling Co.,

BOTTLERS OF

GREENWAY BREWING CO'S BRANDS OF ALE, PORTER, DOUBLE STOUT

—AND—

Germania Brewing Co's Standard Pale Crown Lager & Culmbacher.

N. Y. Depot, 31 Broadway.

Established in London, 1831.

DEAN'S PATENT

ARDENTER MUSTARD.

BEST IN THE WORLD.

WARRANTED ABSOLUTELY PURE.

PATENT OFFICE UNITED STATES OF AMERICA 1871

WARRANTED ABSOLUTELY PURE.

Ardenter Mustard Pellets

—FOR—

Dyspepsia and Indigestion.

UNIVERSALLY recommended and prescribed by physicians. The medicinal property are English mustard seed coated with pepsin and sugar. You will find it will relieve you after using two or three doses. It is very beneficial for Heartburn, Sour Stomach and Headache. They are a beautiful confection for children. Each bottle contains full directions.

W. G. DEAN & SON,

361 and 363 Washington Street, 84, 86 and 88 North Moore Street, New York.

—THE—

CHRISTIAN MOERLEIN

Brewing Co.,

CINCINNATI, U. S. A.,

Brewers of the far-famed

"NATIONAL" EXPORT

(The Queen of Beers)

LAGER.

Owing to its absolute purity, beautiful pale color, fine aroma and nutritious qualities, the above beer has become the PRIME FAVORITE in all the principal hotels and clubs, and in thousands of families throughout the West and South.

Pure LAGER BEER,

"IMPERIAL" and "CULMBACHER"

Brewed & Bottled SPECIALLY FOR HOTELS, CLUBS AND PRIVATE FAMILIES

BY

Beadleston & Woerz

291 W. 10th St. New York.

Orders by Postal Card promptly attended to.

H. CLAUSEN & SON

BREWING CO'S

CHAMPAGNE LAGER BEER,

ROYAL EXPORT LAGER,

EAST INDIA PALE ALE,

EXTRA AMERICAN STOUT.

Bottled for Family Use and Export by

PHŒNIX BOTTLING CO.

888 and 890 Second Avenue,

Bet. 47th and 48th Streets

NEW YORK.

Order from your Grocer, or direct from us.

FULL WEIGHT
PURE
DR. PRICE'S
CREAM
BAKING
POWDER
MOST PERFECT MADE

Its superior excellence proven in millions of homes for more than a quarter of a century. It is used by the United States Government. Endorsed by the heads of the Great Universities as the Strongest, Purest, and most Healthful. Dr. Price's Cream Baking Powder does not contain Ammonia, Lime or Alum. Sold only in cans.
PRICE BAKING POWDER CO.
NEW YORK. CHICAGO, ST. LOUIS.

STERLING
BAKING
POWDER
MADE FROM
99 50/100 PURE CREAM TARTAR.
This powder never varies. A marvel of purity, strength and wholesomeness. More economical than the ordinary kinds. SOLD ONLY IN CANS.
STERLING MANU'F'G CO.,
12 & 14 Spruce St., New York.

CLEVELAND'S
SUPERIOR
Baking Powder
Is made only of the purest grape cream of tartar, purest bicarbonate of soda, and a small portion of flour, and is warranted entirely free from alum, ammonia, the phosphates, terra alba, lime, and all the adulterants frequently found in ordinary baking powders. It always affords the most nutritious, the most healthful, and the most delicious food, and the purity of materials used in its manufacture, and the nicety of their combination, render it the strongest and most economical ever produced.
It is recommended for purity, efficiency and healthfulness by various state chemists, chemists of boards of health, and professors in institutions of learning throughout the country.
Sold only in tin cans.
CLEVELAND BROTHERS,
ALBANY, N. Y.

MANUFACTURED BY THE
ST. LOUIS STAMPING CO.
PATENT
GRANITE IRON WARE
SOLD EVERYWHERE

N. K. FAIRBANK & CO'S
FAIRY SOAP.
A PERFECTLY PURE WHITE FLOATING SOAP.
DESIGNED EXPRESSLY TO USE IN TOILET, BATH AND NURSERY.
Admirably adapted to every requirement of the Household.
DAINTY AND DELICATE FOR ALL WASHING PURPOSES
For sale by all First-class Grocers and Druggists.
N. K. FAIRBANK & CO.,
CHICAGO, ST. LOUIS, NEW YORK, OMAHA.

ESTABLISHED 1872.
GELATINE.
JAMES CHALMER'S SON'S
Transparent Gelatine.
PURITY—STRENGTH.
Best for Family Use.
Jellies, Blanc Mange, Etc.
ACKNOWLEDGED BY EVERY ONE EQUAL TO THE BEST.

CORKS
Francisco Ladó & Co
ESTABLISHED 1866
NEW YORK.

RUBY ROYAL "SEC."
H.P.
HENRI ABEL
RUBY ROYAL
REIMS
This wine, of a bright crimson or Ruby color, possesses exceptional merit in all the characteristics of dryness, mellowness of flavor, and delicacy of fragrance. It is the only red champagne in the market, and can be tried at the Hoffman House, Delmonico's and other first-class places.
Sold by the Leading Grocers.

AGATE IRON WARE
Is the Purest, Cleanest, Most Durable, and altogether the Best Ware for family use ever made. It will not rust or break like ordinary Enamels, and is absolutely pure and safe to use, as certified to by the most eminent chemists here and abroad.

Two thousand different styles and sizes of Agate cooking utensils, for family use, are sold by all first-class dealers throughout the world, and giving universal satisfaction.

Subscriptions $1 per year. Now is the time to subscribe.

AMERICAN ANALYST

FOR THE

FAMILY AND CONSUMER.

A SEMI-MONTHLY ADVOCATE OF PURE FOOD AND THE SUPPRESSION OF ADULTERATION.

Office, 19 Park Place.

[Entered at the Post Office at New York, as Second Class Matter.]

VOL. IV.—No. 17. NEW YORK, SEPTEMBER 1, 1888. Whole No. 89

CONTENTS.

Alcoholic Nostrums 357
Answers to Correspondents 358
Beauty's Enemy 359
Chemical Science; Its Future 359
Clothes, Care of 357
Domestic Dietetics 360
Editorial 358
Lee Pure Food Bill—Salicylic Acid in Beer—Extent of Food Adulteration—An Interstate Precaution—Not Very Comforting.
Hair, Trade in 359
Heating Houses 355
Jim's Romance. Complete Story 353
Only a Minute 356
Rose Jars 360
Warming the House 355
Wrinkles, How to Cure 359

JIM'S ROMANCE.

A TALE OF MIXED BLOOD AND UNREQUITED LOVE.

The town of Gibson, in Indian Territory, is located on the Verdigris River, an arm of the Kansas. It is also on the border line of the Creek and Cherokee countries, and is nine miles distant by wagon road from the military post at Fort Gibson. A few miles to the south the town of Muskogee furnishes its share of local excitement, and is the telegraphing point of many sensational killings. To the east, just twenty miles, Tallaquah offers the most decided touch of metropolitan life that the residents of Gibson and vicinity can reach with a day in the saddle. Some eight or ten houses, including the store that holds the post-office, one or two general groceries, the hotel and railroad station building, make the sum total of Gibson's claim upon the gazetteer.

Duties incident to the writer's association with an eastern paper made a stay of several days at Gibson necessary during the early part of last summer. There was a delightful novelty in the surroundings and a refreshing vigor in the rude simplicity of things and people—character was more rugged, truth seemed more direct, and tenderness held more tears from the very contrast with its setting. The great vines climbed and interlaced the walnut timber that skirted the pretty stream; birds of brilliant colors were on every side, and the rank luxury of the grasses seemed in harmony with the buxom outlines of the Indian girls that ripened early, unconscious of the richness of their health.

The cowboys came to Gibson on their skittish ponies, and dashed away again after a bucking start. The Indians and half-breeds, in their sombreros, shirts and leather breeches, came lazily up and moodily departed in the twilight—to the stranger perplexing enigmas of the gloaming, themselves the lingering rays of a great people whose light has almost gone.

On one quiet evening of that memorable week, memorable for its great quiet, the proprietor of the inn was standing with the writer on the porch. The conversation had been upon his half-breed daughter—the wife was a full-blooded Creek. The girl with a pan of salt was sprinkling it upon some big stones that were in the meadow, just in front, and the sober cows were coming up to lick it.

"Yes, we always give 'em salt when it looks a bit like rain. An' when they smell the damp in the air they come as reg'lar as can be to get it. Them stones is smooth as glass where they've licked 'em for the las' twenty years."

"The girl always does this for them."

"'Cept when she's at school. Then Jim tends to it."

Jim was the farm hand, and now he was sitting at the table whittling.

"I don't know what I'm goin' to do with Jim. He used to be one of the smartes' han's aroun' this country, but he's gittin' awfly no 'count; drinkin' and fightin'."

"Drinkin'? Isn't it against your laws to sell liquors in the Indian country?"

"Oh, yes; but Jim gets it somewhere."

After a little further talk, the inn-keeping farmer strolled down to his stable to turn the horses out for the night, and the writer joined Jim on the platform.

"Jim."

"Yes."

"You were not raised in this section. You have seen considerable of the world."

"About as much as most fellows of thirty-five."

"How long have you been here?"

"With the ole man?"

"Yes."

"'Bout twelve year."

"Jim, we've known each other only a few days, and it isn't my business, perhaps, but you're getting tired of your life here. The folks say you are not—well—not as steady as you used to be. What is the trouble? To-morrow I am going back to the States—maybe never will see you again, and it kind-a occurred to me that you'd like to talk about yourself. I believe everybody feels that way at times."

Jim waited a long time, so long that the fear presented itself that he was going to rebuke the questioner by his silence, and then—

"Them meader larks—hear 'em? They make me bluer'n death—them an' that girl there by the cows."

The plaintive whistle of the meadow lark was all about, and the figure of the dusky maiden, duskily outlined against the evening sky, suggested the soft treatment of the etching of the Angelus. No wonder, Jim, you feel blue.

"When I furst came here I was twenty-three. My home was in Missury, but I'd been all over the United States. I'd been a canvasman with a circus. Bella, there, was only six, a little half breed Injun girl, but purty as she could be. I taught her letters to her, an' I taught her to spell, an' then to read a little, an' when she was nine she could pick out words in the newspaper."

Jim looked up at this for some appreciation of his work. His lips were shut and his nostrils dilated in a swelling pride at the recollections, and then as memory carried him on from that time to something that touched him deeper, the lines of the face came down and the shadow of the evening crept into the manly eyes.

"Then her father thought she knowed enough, but I knowed she didn't. I knowed she oughter to be sent to school. The nation was just startin' a seminary at Tallequah, an' I got the old man to let me take her there. I'd rather not say this, but the way I got him to do it was by payin' her expenses myself. I'd never had no sisters or brothers, an' I never expected to have no family, so I thought I'd do what I could for that little girl. It is twenty miles to Tallequah, an' I used to drive her over there in the wagon, an' go after her Christmas times an' vacations. When the school term was long, once or twice I went up in the States an' rustled an' made a little extra, but I always come back in time to get her. I wished I could tell you how she growed. How she got prettier every day, an' how her face seemed to get brighter than the faces round about here as she learned and learned. She used to ask me questions about everything, about the States an' the people an' the towns. That was when she'd come home, and then sometimes at school she'd write me letters with questions in 'em, an' I sit up o' nights to answer 'em. Do you know, I kind a got to longin' for them letters an' a-watchin' for 'em? Yes, sir."

Jim was thinking again. Once he got down from the platform to the track that ran by and kicked mechanically at the cinders that formed the ballast. Then he picked up a loose washer that was there, and like a boy sailed it off into the field. But he couldn't shake off the heaviness of his mood.

"I don't know how it happened, but when she was about twelve or thirteen she quit asking me questions about Boston an' New Orleans an' people, an' commenced to tell me things—history an' old stories. I remember one about a girl named Charlotte Corduroy, that killed a Frenchman in a bath-tub. Did you ever hear that? Yes. Well I guessed you had, but there was lots of things like that, an' then—then"

"What, Jim?"

"Then—I was trying to think how to tell it—but when I would try to tell her anything, instead of looking interested like an' her brown eyes gettin' big, like they used to, I'd catch her laughin', quiet like, jest as if she'd read it so much better than I could tell her; an' every vacation she seemed so much bigger an' so different that I began to stand off like, an' once I went to call her name an' I called her Miss Bella, just as if I'd never knowed her when she was a baby or carried her on my saddle when I went to bring in the cows, or anything like that."

"You called her Miss Bella?"

"Yes, an' ever since that, whenever I've forgot to say Miss, and it's only been once or twice, she kind o'

LACTOPEPTINE,

The most important remedial agent ever presented to the Profession for Dyspepsia, Vomiting in Pregnancy, Cholera Infantum, Constipation, and all Diseases arising from imperfect nutrition.

Lactopeptine precisely represents in composition the natural digestive juices of the Stomach, Pancreas and Salivary Glands, and will, therefore, readily dissolve all foods necessary to the recuperation of the human organism.

CAUTION

We regret that we are compelled to caution the profession in prescribing Lactopeptine, but very careful investigation has proven to us clearly the necessity of it. Substitution of cheap and worthless compounds are being made in many cases where Lactopeptine is prescribed.

Lactopeptine is always UNIFORM, and its effects are SPECIFIC, and no one has ever been able to imitate its digestive value. If you do not obtain positive results when you prescribe Lactopeptine, you can be sure that some substitution has been made, and in such cases it may be necessary for the physician to prescribe Lactopeptine in the original ounce package to insure certainty of obtaining the genuine article. We can confidently make this assertion, knowing the scrupulous uniformity in digestive value of every ounce of Lactopeptine.

Lactopeptine has always been kept strictly in the hands of the Medical Profession, never having been admitted in any publications but Medical Journals. It is prescribed by the most intelligent and educated physicians in all parts of the world, and there are but few physicians who have ever used Lactopeptine that will not agree with the late Prof. L. P. Yandell, when he says: "Lactopeptine is one of the certainties in medicine, and in this respect ranks with Quinine."

In the various forms of Dyspepsia, in vomiting in Pregnancy, and in Mal-nutrition of children, there is no known remedy so positive in results.

P. O. Box 1574. THE NEW YORK PHARMACAL ASSOCIATION, NEW YORK.

smiles in her queer way an' lifts her eyebrows like a feller would if he was askin' if you hadn't forgot something."

"Well, that shouldn't depress you, Jim. That's a way with all girls. There comes a time when they freeze their old friends and have to be called Miss."

"Oh, 'tain't that, sir! But I got to thinkin' about her so that I couldn't work, an' when I'd take her back to school I felt like I wanted to kill any feller that looked at her. You see, sir, I was likin' her too much."

"I see, Jim."

"Well, last summer, I made up my mind I'd tell her about it an' I did. I asked her one night to go with me, and we sauntered along the edge of that holler whear the timber is. The evenin' seemed so still that I could hear my heart beatin', and when one o' them meader larks whistled it sounded like the express to me. She would drop on her knees every now and then to pull some of the violets that grows over there, an' once she lafed and pinned some of them on to my shirt an' I wouldn't stand that. I took hole of her two hands an' she jumped kind o' skeered like, but I held 'em and looked straight in her eyes an' told her. I told her that I loved her, an' that I'd try to make her happy all her life. I told her I'd loved her ever since she was a little girl and used to set her on my knee."

Jim put his face in his hand and seemed lost in the recollection, either of that evening or of the baby girl of whom he talked so tenderly.

"I tell you it was tough, sir. She said she used to like me once, but that since she'd been goin' to school her learnin' has made her dissatisfied with the Injun country an' the people here. She said if she married it would haf to be a man that had read a heap an' knew lots about books. She said her idear of a real man was an editor or some young feller that could write a newspaper. She said I was a good enough fellow in the saddle, and she liked me as a frien', but to be even that I must never mention the matter to her again.

MELLIN'S

TRADE MARK.

FOR INFANTS & INVALIDS

FOOD

The Only Perfect Substitute for Mother's Milk.

A Copy of our Book,

The Care and Feeding of Infants

will be MAILED FREE to any address.

DOLIBER, GOODALE & CO.,

40-41-42-43 Central Wharf, Boston, Mass.

THE SCIENTIFIC WORLD'S VERDICT

— ON —

NESTLÉ'S MILK FOOD

Eminent Physicians in all countries, pronounce

NESTLÉ'S

FOOD FOR INFANTS

The Safest and Best Diet in Summer.

SAMPLE AND PAMPHLET SENT ON APPLICATION.

No Other Infants' Food in the World has received Twelve Diplomas of Honor.

STEVENSVILLE MILLS.

IMPEROYAL VACUUM COOKED OATS.

IMPEROYAL VACUUM COOKED WHEAT.

M. D. STEVENS'

SOLE MANUFACTURER OF

ABSOLUTE PURITY.

M. D. STEVENS IMPEROYAL WHEAT & BUCKWHEAT FLOUR

REGISTERED TRADE MARK.

HOUSEHOLD NECESSITY.

ONE MINUTE IN PREPATATION.

IMPEROYAL VACUUM COOKED HOMINY.

IMPEROYAL GRIDDLE CAKE FLOUR.

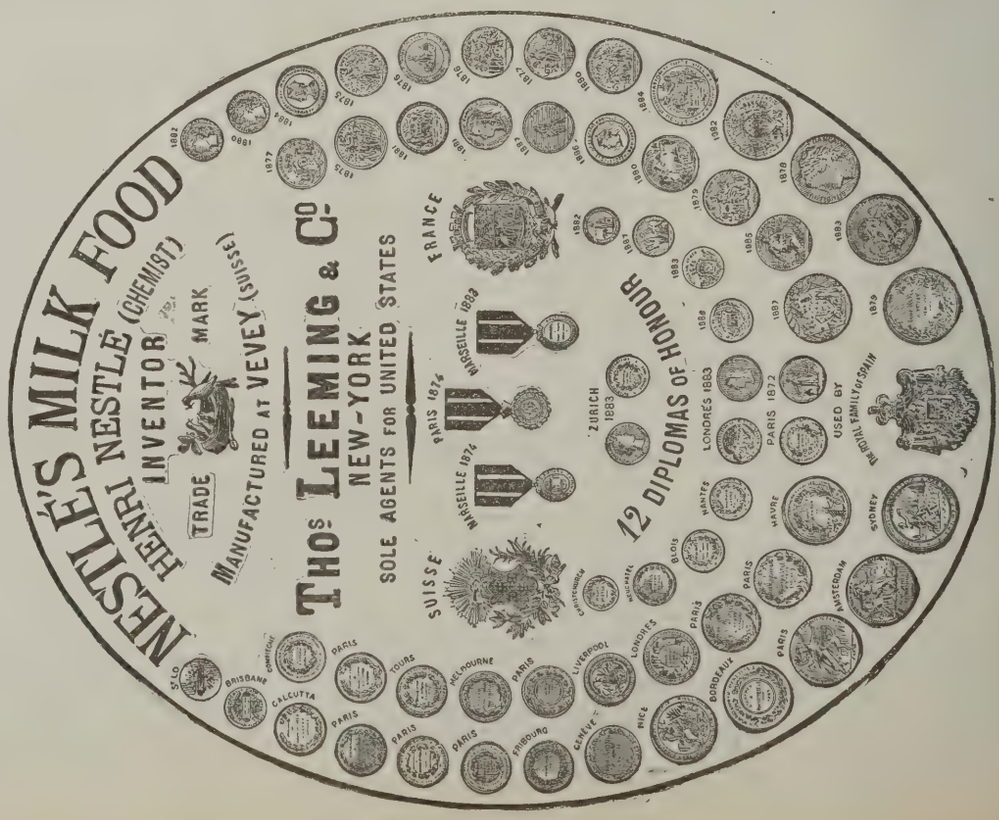
Recommended by Eminent Physicians and Chemists.

☞Adapted to all kinds of Pastry, Bread, Biscuit, Griddle Cakes, etc., and its absolute purity and freedom from Alum, Terra Alba or any injurious ingredient, makes it a necessity in every household. No lady can afford to be without it. Sold by best Grocers.

M. D. STEVENS,

Room 18, Mercantile Exchange,

Cor. Hudson & Harrison Sts., NEW YORK.



F. W. DEVOE & CO.,

ESTABLISHED 1852.

PURE MIXED PAINTS

WE desire to call attention of consumers to the fact that we guarantee our ready-mixed paints to be made only of pure linseed oil and the most permanent pigments. They are not "Chemical," "Rubber," "Patent," or "Fireproof." We use no secret or patent method in manufacturing them by which benzine and water are made to serve the purpose of pure linseed oil. Sample cards containing 50 desirable shades, sent on application.

Catalogues of our different departments to responsible parties.

FINE VARNISHES, WOOD FILLERS, WOOD STAINS.

Artist's Materials. Mathematical Instruments.

Cor. Fulton and William Sts., New York.

COFFIN, DEVOE & CO.,

179 RANDOLPH STREET, CHICAGO.

IMPORTANT

TO THE

MEDICAL PROFESSION.

Send your address to THE NEW YORK PHARMACEUTICAL COMPANY, BEDFORD SPRINGS, MASS., for Illustrative Hand-book, **FREE,** containing valuable formula, special directions, and the testimonials of one thousand physicians in favor of the great merits of

HAYDEN'S

Viburnum Compound,

IN FEMALE DISEASES.

Also, the

URIC SOLVENT,

For KIDNEY DISEASES, and complaints arising therefrom.

UNEQUALLED AS A POLISHER, A BENEFIT TO THE GUMS.

Dr. J. P. Carmichael, D.D.S., Milwaukee, Wis. adds his testimony regarding the merits of the



MILWAUKEE, WIS., *July* 13, 1888.

GENTLEMEN:—The more I use your Ideal Felt Tooth Polisher the more favorably impressed I am with it. As a polisher for the teeth and a means of hardening the sensitive gums, it has no equal.

J. P. CARMICHAEL, D.D.S.

Its Economy: First cost, 60 cents, for holder and box of 18 Felt Polishers, latter only need be renewed, 25 cents per box; holder imperishable; at all druggists or mailed by

HORSEY MFG. CO., UTICA, N. Y.

Then she walked straight back to the house. I watched her pass this depot on' them stones there an' go in the door, and then I went down the holler. 'Tain't no use, sir; I've tried to brace up agin' it, but I can't, an' the folk can't see why I go down to Muskogee and get full, and wrastle with the depity sheriff."

"Why don't you go away, Jim? Leave this quiet place—go up in the busy States. You can't forget her when she's daily in your sight."

"I'll tell you. She's home now on what they call the Easter vacation, an' she won't graduate till June. See?"

"Hardly."

"Why, she's set her heart on her education. She's learnin' Latin and history an' all about the stars. She's got 'em all named. Well, it'd break her heart to quit now before June. Ef I was to go away the ole man wouldn't keep her in school a day longer. There's so many things to git. Her ma and me has planned to go to Kansas City to buy her a fine dress to graduate in an' all that kind of stuff. Why, I've got to stay till then, an' then——"

"And then?"

"Why, then I'm going with Forepaugh agin a drivin' stakes, an' a travelin', travelin'."

"Jim, does she—does Miss Bella know you are doing this for her; that you are paying her tuition and providing her expenses?"

"Why, bless you, no, sir. She thinks the ole man is doin' it."—*Missouri Republican.*

WARMING THE HOUSE.

SOME SCIENTIFIC, ECONOMIC AND PRACTICAL SUGGESTIONS.

In temperate latitudes the climate is generally such as to necessitate in dwellings, during a great portion of the year, a temperature warmer than that out of doors, and, similarly, tropical plants growing in temperate climates require artificial heat in the house in which they are preserved. Thus heating is required for health and comfort; the object of the application of science is to obtain these with the greatest degree of economy. In its aspect as to health it may be assumed that no system of heating is advisable which does not provide for a constant renewal of the air in the locality warmed. In climates such as that of the United States, the temperature of living rooms should be maintained at from 54 deg. to 68 deg. Fahr. in the day time; the night temperature may be lower, but should not fall below 40 deg.; and the humidity of the air, as measured by the wet and dry bulb thermometers, should show a difference of not less than 4 deg. nor much exceeding 8 deg. between the two thermometers, although with an ample supply of air a greater degree of dryness would probably not be found objectionable.

All heating apparatus depends upon the transferrence of heat from the fire to the various parts of the building which it is intended to warm, and this transfer may be effected by radiation, by conduction, or by convection. Radiant heat is emitted and absorbed in an accelerating ratio in proportion as the degrees of temperature between the radiant and the recipient increases; and, with the same difference of temperature between the recipient and the radiant, the effect of the radiant will be greater according to the increased temperature of the recipient. In other words, the ratio of the emission of heat increases with the temperature. It is thus easier to effect the warming of a given space by means of a highly heated surface than by a surface emitting a lower temperature.

An open fire acts by radiation; it warms the air in a room by first warming the walls, floor, ceiling, and articles in the room, and these in their turn warm the air. Therefore, in a room with an open fire, the air of the room is, as a rule, less heated than the walls. In this case the warming of the air depends on the capacity of the surfaces to absorb or emit heat; except that the heat received by the walls may be divided into two parts, one part heating the air in contact with the wall, and the other passing through the wall to the outer surface, where it is finally dissipated and wasted. Fire-places are sometimes constructed to assist the warming of the air of a room. For instance, in Sylvester's grate iron bars of which one end terminates under the fire, are laid so as to form a projecting radiating hearth. The ventilating fire-place warms the fresh air before its admission into the room by means of gills cast on the back of the grate

The Standard of Excellence.

KINGSFORD'S

OSWEGO

Pure and Silver Gloss



STARCH

KINGSFORD'S

OSWEGO CORN STARCH

FOR

Puddings, Custards, Blanc-Mange, Etc.

THE PERFECTION OF QUALITY.

WILL PLEASE YOU EVERY TIME.

Always ask your Grocer for these goods.

COLDEN'S LIQUID BEEF TONIC.

ORIGINAL LABEL:
"Colden's Liebig's Liquid Extract of Beef and Tonic Invigorator."

AN INVALUABLE AID IN THE TREATMENT OF ALL CASES OF DEBILITY.

Established 15 Years. Endorsed by Scores of Physicians. Essentially Different from all other Beef Tonics. Beware of Imitations.

COLDEN'S LIQUID BEEF TONIC consists of the Extract of Beef (by Baron Liebig's process), spirit rendered non-injurious to the most delicate stomach by extraction of Fusel Oil, soluble Citrate of Iron, Cinchona, Gentian and simple aromatics. An official analysis of this preparation by the eminent chemist ARTHUR HILL HASSALL, M. D., F. R. S., and an endorsement by SIR ERASMUS WILSON, F. R. S., is printed on the label of each bottle.

Its Range of Action Embraces all Cases of Debility.

By the urgent request of several eminent members of the medical profession, I have added to each wineglassful of this preparation two grains of SOLUBLE CITRATE OF IRON, and which is designated on the label as "No. 1," while the same preparation, without Iron, is designated on the label as "No 2."

It acts directly on the sentient gastric nerves, stimulating the follicles to secretion and gives to weakened individuals that first pre-requisite to an improvement, an appetite.

☞ *I will, upon application, send a sample bottle of* ***Colden's Liquid Beef Tonic*** *to any physician in regular standing. Please ask your Dispensing Druggist (if he has not already a supply) to order it. In prescribing this preparation physicians should be particular to mention "COLDEN'S" viz: "EXT. CARNIS. FL. COMP. (COLDEN). It is put up in pint bottles and can be had of Wholesale and Retail Druggists generally throughout the United States.*

C. N. CRITTENTON, Sole Agent,

115 Fulton Street, N. Y.

Please Mention the AMERICAN ANALYST.

In a close stove, heated to a moderate temperature, the heat as it passes from the fire warms the surface of the materials which enclose and are in contact with the fire and with the heated gases. The materials next transfer the heat to the outer surface in contact with the air and the air is warmed by the agency of this outer surface. If heated to high temperatures a stove gives out radiant heat which passes through the air to warm the objects on which the rays impinge.

With hot water pipes the heat from the water heats the inner surface of the pipe, and this surface transfers its heat to the outer surface through the material of the pipes. The rate at which the heat can pass from the inner to the outer surface, and be thus utilized instead of passing away straight into the chimney, depends on the heat evolved by the fire, on the extent of surfaces exposed to the heat and their capacity to absorb and emit heat, and on the quality of the material between the inner and the outer surface as a good or bad conductor of heat. This passage of heat through a body by conduction varies directly with the quality of material, and with the difference between the temperature of the inner surface exposed to a cooling influence, and inversely as the thickness between the surfaces. Other things being equal, copper is a better material than iron for conveying the heat from the fire to water or air; and coverings of brickwork, wood, or woolen fabrics are better adapted than iron for retaining the heat. The property which appears more than any other to make materials good non-conductors of heat is their porosity to air, and the retention of the air in their pores.

The various methods of heating now in use may be classified as follows:

1. Stoves, fire-places, and furnaces or heaters.
2. Steam and hot water apparatus.

Stoves and fire-places are structures of iron and other materials in which fuel is burned for heating and ventilating apartments and for cooking purposes. Following the primitive open hearth, the first separate heating apparatus used by Egyptians, Greeks, and Romans was the brazier, an open basin of metal in which charcoal was consumed. The brazier is still in common use for industrial purposes, and in Continental Europe it is widely employed both for cooking and for domestic heating. The Romans, further, were acquainted with the hypocaust, a separate chamber under the floor of the apartment to be heated. In an improved form of hypocaust, flues were provided which conveyed the heat and products of combustion to the floors of other apartments at some distance from the fire. In the remains of Roman villas found in Britain the hypocaust is an invariable feature, and so it was in the baths which were fitted up on the most extensive scale and with luxurious fittings, many ruins such as those of Pompeii attesting to that fact. The introduction of chimnies into houses in the early part of the fourteenth century opened the way to all modern improvements in the heating arrangements of apartments, and the efforts of inventors have been devoted to the securing of the thorough combustion of the fuel used, and to the utilization of the maximum amount of heat therefrom in the most healthful and agreeable manner.

The stove, as distinguished from the open fire-place, distributes the largest amount of heat from the fuel it burns. In its simplest form, the common stove consists of a case of iron, closed above, with its sole raised from the floor on which it stands. It has two small openings in one side, one on the level of the fire bars for draught, and the other above for supplying fuel; and on the opposite side the products of combustion are carried away be a flue-pipe passing into a chimney. In a more complex form, the height of the case or body is increased, and a series of horizontal flues, or spaces, are formed inside, through which the heated air and smoke pass, thus extracting more thoroughly the heat before it enters the chimney, and giving a greatly increased heating surface. Such stoves overdry the air in rooms, and when they are externally heated to a high degree, floating particles are burned by falling on their surfaces, whence arises the disagreeable stuffy smell almost inseparable from their use. To mitigate this evil of overheating, linings of tiles, fire-brick and other non-conducting materials are with great advantage introduced between the heated iron and the air of the apartment. In ventilating stoves, the outside casing of iron is entirely protected from the direct action of fire by a lining of fire-brick. The inside is divided into several spaces, or flues, and air drawn from without enters by a separate flue, and passing through these spaces is heated and delivered into the apartment as a warm current. In another class, of which the gill stove is the type, there radiates from the fire-case a range of flanges, or gills, a few inches apart, which conduct the heat outwards and enormously extend the heating surface, counteracting at the same time the tendency to over-heating.

Fire-places are entirely open in front. They radiate heat into the apartment, and flame, smoke, etc., pass direct into the chimney. The rapid passage of the heated air into the chimney carries away a large proportion of the heat, and this loss is particularly great. In grates of good quality the sides and back of the fire-basket are of fire-brick, which retains and throws out much heat. In slow combustion grates, the fire-basket is set low on the hearth, and air is admitted to the fuel only through the fire-bars in front. The back of the grate slopes in towards the hearth, where the fire space is comparatively narrow. By means of a door sliding down over the front from the upper part of the grate, the indraught of air can be modified at pleasure. In ventilating fire-places, the fire-basket is of iron lined with fire-brick, and in the space between the back of the grate and the wall, flues are formed, which are heated from the fire. Into these flues air from without is introduced, which, after being there warmed, passes into the apartment at suitable openings.

(To be continued.)

ONLY A MINUTE.

ALL THAT IS TAKING PLACE IN THAT SHORT INTERVAL.

A ray of light travels 11,100,000 miles in a minute.

In the United States the telephone is used 505 times, the telegraph 136 times in a minute.

In a minute the lowest sound your ear can catch has been made by 990 vibrations, while the highest tone reaches you after making 2,228,000 vibrations.

In each minute in the United States, night and day, all the year round, 24 barrels of beer have to go down 12,096 throats, and 4,830 bushels of grain have to come to bin.

Of tobacco 925 pounds are raised, and part of it has been used in making 6,673 cigars, and some more of it has gone up in the smoke of 2,292 cigarettes, in the United States, in one minute.

In a minute an express train goes a mile, and a street car 32 rods; the fastest trotting horse 147 $\frac{9}{18}$ rods, and an average pedestrian of the *genus homo* has got over 16 rods.

In a minute we are whirling around on the outside of the earth by its diurnal motion a distance of 13 miles, and at the same time go along with the earth on its journey around the sun 1,080 miles.

Every minute 6,000 pounds of wool grow in this country, and we have to dig 61 tons of anthracite coal and 100 tons of bituminous coal, while of pig iron we turn out 12 tons, and of steel rails 3 tons.

BURNETT'S
PERFECTLY PURE HIGHLY CONCENTRATED
Standard Flavoring
EXTRACTS

THE superiority of these Extracts consists in their
PERFECT PURITY AND GREAT STRENGTH.

There is no subject which should more engross attention than the purity of the preparations which are used in flavoring the various compounds prepared for the human stomach.

They are not only true to their names, but are prepared from fruits of the best quality, and so highly concentrated that a small quantity only need be used.

JOSEPH BURNETT & CO., Boston, Mass.



ALTHEA.

The greatest hygienic face stimulant. Is the grandest preparation for the complexion ever discovered.

PRICE, $1.00 PER BOTTLE.

MANUFACTURED BY THE
ALTHEA COMPANY
25 West 125th St., N. Y.

Ask your druggist for it, or send direct to us.

"ROYAL POLISH"



The Most Reliable Dressing
FOR
Ladies' and Children's Shoes.

It is the BLACKEST.
It COATS the Leather the LEAST.
Does NOT INJURE the Finest Kid.

There is nothing AT ANY PRICE equal in quality, or so convenient and CLEANLY TO USE.

SOLD EVERYWHERE.

Ask Dealers for "BIXBY'S ROYAL POLISH."



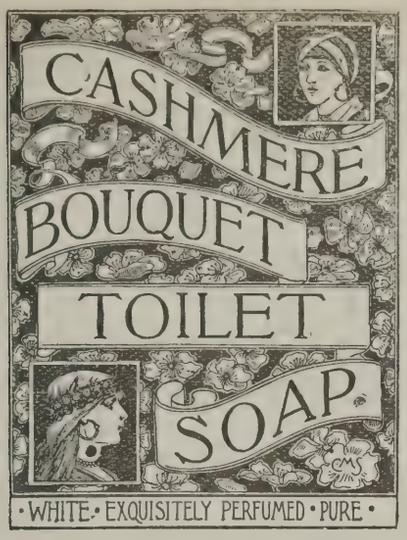
"BIXBY'S BEST"
For GENTS' BOOTS.

Shines Quickly!
Saves Labor and
Leather!!

—TRY—
"Size 5" OR
"Size B"
WITH
Pat. Sliding Handle



THE MOST PERFFECT EVER INVENTED.
Working under the box, ready for use when wanted



ALCOHOLIC NOSTRUMS.

ANALYSES OF SOME WIDELY-ADVERTISED PREPARATIONS.

Dr. F. Davenport, one of the analysts of the State of Massachusetts, reports the following results of his examinations of 50 samples of proprietary preparations, tonics and bitters, with special reference to the relation which the percentage of alcohol which they were found upon assay to contain might bear to the admission of the presence of any claims for the absence of all alcohol, as given upon their labels and wrappers. I have also noted the doses and frequency with which they were recommended to be used, as well as the place of their origin. The alcohol found upon assay is given in per cent. by volume. How far the claim of some of them for special usefulness in the reformation of intemperate habits is justified is self-evident.

TONICS.

Dr. Buckland's Scotch Oats Essence, New York City. "Enough alcohol is added to dissolve resins, and prevent formentation." "Not a temporary and fleeting stimulant, but a permanent tonic. Its use must be regulated and continued over a considerable period. An extract of double and triple strength also made. Dose, 10 to 15 drops to a teaspoonful three or four times daily, increased as needed." In the simple essence 35 per cent. of alcohol was found on assay. Further examination of this article reveals a still more dangerous ingredient in its composition. The sample analyzed was found to contain one-fourth grain of morphia to the ounce of the so-called "Essence of Oats." A more insidious and dangerous fraud can scarcely be imagined, especially when administered, as this is recommended, for the cure of inebriety or the opium habit.

Carter's Physical Extract, Georgetown, Mass. Dose, 1 teaspoonful, 3 times daily. 22 per cent. of alcohol found on assay.

Hooker's Wigwam Tonic, Haverhill, Mass. One tablespoonful, 3 times daily. 20.7 per cent. of alcohol found on assay.

Hoofland's German Tonic, Philadelphia. Admits Santa Cruz rum. Wineglassful, 4 times daily. 29.3 per cent.

Hop Tonic, Grand Rapids, Mich. One tablespoonful to wineglassful, 3 times a day. 7 per cent.

Howe's Arabian Tonic, New York. "Not a rum drink." Tablespoonful to wineglass, 4 times daily. 13.2 per cent.

Jackson's Golden Seal Tonic, Boston. Admits Marsala wine. Half wineglass, 3 times daily. 19.6 per cent.

Liebig Co.'s Coca Beef Tonic, New York. "With sherry." Two to four teaspoonfuls, 3 times daily. 23.2 per cent.

Mensman's Peptonized Beef Tonic, New York. "Contains spirit." One tablespoonful to 3, 3 times daily. 16.5 per cent.

Barker's Tonic, New York. "A purely vegetable extract." "Stimulus to the body without intoxicating." "Inebriates struggling to reform will find its tonic and sustaining influence on the nervous system a great help to their efforts." Does as tonic, 1 to 2 teaspoonfuls, 1 to 3 times daily. 41.6 per cent.

Schenck's Sea-weed Tonic, Philadelphia. "Distilled from sea-weed after the same manner as Jamaica spirits is from sugar cane. It is therefore entirely harmless, and free from the injurious properties of corn and rye whiskey." Dose, half wineglass, 3 times daily. 19.5 per cent.

BITTERS.

Atwood's Quinine Tonic Bitters, Boston. Dose, half tablespoonful to half wineglass, mixed with water, wine or spirit, 3 times daily. 29.2 per cent.

L. F. Atwood's Jaundice Bitters, Portland, Me. Half tablespoonful to wineglass, 1 to 6 times daily. 22.3 per cent.

Moses Atwood's Jaundice Bitters, New York. Half tablespoonful to wineglass, 1 to 6 times daily. 17.1 per cent.

H. Baxter's Mandrake Bitters, Burlington, Vt. One to 2 tablespoonfuls. 16.5 per cent.

Boker's Stomach Bitters, New York. Dose not given. 42.6 per cent.

Brown's Iron Bitters, Baltimore, Md. "Perfectly harmless." "Not a substitute for whiskey." Tablespoonful. 19.7 per cent.

Burdock Blood Bitters, Buffalo, N. Y. Teaspoonful to tablespoonful, 3 times daily. 25.2 per cent.

Carter's Scotch Bitters, Georgetown, Mass. Teaspoonful to wineglassful, as occasion requires. 17.6 per cent.

Colton's Bitters, Westfield, Mass. Teaspoonful to 2 tablespoonfuls, 3 times daily. 27.1 per cent.

Copp's White Mountain Bitters, Manchester, N. H. "Not an alcoholic beverage." Wineglassful. 6 per cent.

Drake's Plantation Bitters, New York. "Contains St. Croix rum." Wineglassful, 3 times daily. 33.2 per cent.

Flint's Quaker's Bitters, Boston. Teaspoonful, 6 times daily. 21.4 per cent.

Goodhue's Bitters, Salem, Mass. Half wineglassful. 16.1 per cent.

Hartshorn's Bitters, Boston. Tablespoonful to half wineglassful. 22.2 per cent.

Hoofland's German Bitters, Philadelphia. "Entirely vegetable and free from alcoholic stimulant." Tablespoonful, 4 times daily. 25.6 per cent.

Hop Bitters, Rochester, N. Y. One to 3 tablespoonfuls, 3 times daily. 12 per cent.

Hostetter's Stomach Bitters, Pittsburg, Pa. Wineglassful, 3 times daily. 44.3 per cent.

Kaufman's Sulphur Bitters, Boston. "Contains no alcohol." Tea to tablespoonfnl. It contains no sulphur, but has 20.5 per cent. of alcohol.

Kingsley's Iron Tonic, Northampton, Mass. One to 2 teaspoonfuls, 3 times daily. 14.9 per cent.

Langley's Bitters, Boston. Half wineglass or more, 3 times daily. 18.1 per cent.

Liverpool's Mexican Tonic Bitters, Boston. Half to full wineglassful, 3 times daily. 22.4 per cent.

Oxygenated Bitters, New York. Tea to tablespoonful. Acid but no alcohol.

Pierce's Indian Restoration Bitters, Boston. Up to wineglassful, and to 6 times daily. 6.1 per cent.

Z. Porter's Stomach Bitters, New York. Tablespoonful or more several times daily. 27.9 per cent.

Rush's Bitters, New York. Wineglassful, 4 times daily. 35 per cent.

Dr. Richardson's Concentrated Sherry Wine Bitters, Wakefield, Mass. Tablespoonful to half wineglass or more, 3 times daily, "or when there is sensation of weakness or uneasiness at the stomach." 47.5 per cent.

Secor's Cinchona Bitters, Providence, R. I. Half wineglassful, 3 times daily. 13.1 per cent.

Shonyo's German Bitters, Concord, N. H. Tablespoonful to wineglassful. 21.5 per cent.

Job Sweet's Strengthening Bitters, New Bedford. Tablespoonful to wineglassful, 3 times daily. 29 per cent.

Thurston's Old Continental Bitters, Lynn, Mass. Tea to 2 tablespoonfuls. 11.4 per cent.

Walker's Vinegar Bitters, New York. "Free from all alcoholic stimulants. Contains no spirit." Half to full wineglass. 6.1 per cent.

Warren's Bilious Bitters, Boston. Teaspoonful to 2 tablespoonfuls, 1 to 3 times daily. 21.5 per cent.

Wheeler's Tonic Sherry Wine Bitters, Boston. Two-thirds wineglass, twice daily. 18.8 per cent.

Wheat Bitters, New York. Dessert to wineglass, 3 times daily. 13.6 per cent.

Faith Whitcomb's Nerve Bitters, Boston. Tablespoonful, 3 times daily. 20.3 per cent.

Dr. William's Vegetable Jaundice Bitters, Lowell, Mass. Half to full wineglass, once daily. 18.5 per cent.

CARE OF CLOTHES.

SUGGESTIONS TO FOLLOW TO MAKE THEM LAST.

Clothes which are well cared for will last twice as long as those carelessly treated, and with a liberal expenditure of time and a little display of taste can be remodelled and made to do duty for a long time. Eternal vigilance is the price of success for poor people in dressing well, and it should be exercised, as nothing pays better. Garments can be injured as much by careless handling when not worn as when in use. Dresses thrown across a chair or hung in a crowded wardrobe under other heavy articles will be creased and injured. Laces, gloves and ribbons tossed into a drawer with other articles will not appear fresh and neat when worn. It is an excellent rule to carefully put away every article of apparel as soon as taken off. Dresses should be shaken and well brushed, and if handsomely and elaborately trimmed, should be folded, every fold and plait in place, carefully pinned up in a large towel, and laid in a drawer. This is very important in order to keep dresses in shape, or if preferred to hang them up, loops should be sewed on the back of the shoulder, by which they may hang. Cloaks, after being brushed, may be laid in a long drawer, or hung by a loop in the back of the neck. Shawls should be carefully folded in the original creases, wrapped in a paper or a square cloth, before laying away in a drawer. Gloves should be pulled out lengthwise, folded in thin paper and laid in a small box kept for the purpose. Laces should be smoothed out and placed where they will keep clean and fresh. Veils, ribbons, sashes, silk handkerchiefs and silk stockings will keep in good condition much longer if folded in proper shape and laid under a weight. Shoes, if thrown around in the dust, will not last as long or look as well as when stretched out of the wrinkles, well brushed and put carefully away. Bonnets and hats are more easily spoiled by want of care than almost any article of dress. They should not, therefore, be allowed to lie about on tables or in dusty places unprotected, but as soon as taken from the head should be brushed, the trimmings and feathers straightened and laid in boxes. Every lady's room should be furnished with a clothes brush, a wisp broom, a hand brush, a sponge, a bottle of ammonia, a vial each of alcohol and benzine, also some cleaning fluid or erasive soap, to aid her in keeping her wardrobe in order. Another very necessary item in the care of clothes is mending and repairing every article as it may need it. The time spent in so doing is well bestowed, for, besides the pleasure it gives to always appear in whole, respectable garments, the clothes will last twice as long. Every rip and rent in dresses, skirts or underclothes should receive attention as soon as it occurs. The old time adage, "A stitch in time saves nine," is well to remember. Gloves should be mended as soon as a rip appears in the fingers, and, if thin and worn in the hand, may be neatly darned or mended with a piece from an old glove of the same color.

American Analyst,

Published on the 1st and 15th of each month.

Subscription, - - - - - - $1 per year.
Single Copies, - - - - - - 5 cents.
Subscriptions to foreign countries, - $1.50.

Remit by Express Money Order, Draft, P. O. Order, or Registered Letter.

Advertising rates on application.

EUROPEAN AGENCIES.

On file at "American Exchange," 449 Strand, London; and American Exchange," 35 Boulevard Des Capucines, Paris.

THE ANALYST PUBLISHING CO.,
Publishers.

H. LASSING, M. D., } ***Editors.***
T. P. McELRATH,

No. 19 Park Place, ... New York.

NEW YORK, SEPTEMBER 1, 1888.

CORRESPONDENTS AND EXCHANGES.

Please direct all business communications to

THE AMERICAN ANALYST,
19 Park Place,
New York.

ANSWERS TO CORRESPONDENTS.

MALT.—1. Yes, if you allow sufficient time between the different steps of the process. 2. The English recipes for finings for general use is as follows: Take of good isinglass, 1 lb.; sour beer, 3 or 4 pints. Macerate together till the isinglass swells, and add more of the sour liquid until a gallon has been used. Strain, and further dilute. A pound of good isinglass should make 12 gallons of finings, and 1½ pints finings is enough to clear a whole barrel of beer.

HANNAH.—*Is there any remedy for reducing flesh?* Yes, there are four so-called systems in vogue for that purpose. The eating of nothing containing starch, sugar or fat, called the Banting system; the eating of fat, but not sugar or starch, called the German Banting; the wearing of wool, and sleeping in flannel blankets instead of sheets, or the Munich system; the allowing of a couple of hours to intervene between eating and drinking, or the Schweninger system.

W. L., LOS ANGELES.—Your question is practically answered by a calculation of the mechanical working of the heart. Assuming that the pulsations of that organ are sixty-nine each minute, and that the force of each pulsation is nine feet, the mileage of the blood through the body would be about 207 yards per minute, seven miles per hour, 168 miles per day, 61,320 miles per year, or 4,292,400 in a lifetime or three-score years and ten. The number of beats of the heart in the same long life would reach the grand total of 2,538,848,000.

PRUDENCE.—A detailed answer to your inquiry would occupy too much space for this department. Briefly, canned goods of all kinds should be eaten or cooked as soon as opened, and under no circumstances should they be placed in the refrigerator to be kept. After canned fruits and jams are opened fermentation sets in, and it continues in the stomach after they have been eaten. The practice of reboiling home-made preserves, which have begun to ferment, cannot be recommended, for, although frequently this may destroy the organism which causes the ferment, it is by no means invariably the case. Cheap jellies put up in glass tumblers should never be used. They are made from a very poor quality of gelatine, colored and flavored artificially. The color and flavor are harmless in the majority of cases, but the jelly itself is indigestible. Ice cream, cream cake or lemon pie should be eaten within twelve hours after they are made. In the case of a party or picnic where the ice cream is purchased from a confectioner, particular inquiry should be made as to its freshness, and if it is more than twelve hours old it should be unhesitatingly rejected.

THE LEE PURE FOOD BILL.

The Lee pure food bill, ordered, as stated in the AMERICAN ANALYST of August 1st, to be reported by the House Committee on Agriculture, provides that "any person, persons or corporations causing to be made, manufactured, sold or offered for sale, or transported from one State into another, or into any territory or reservation of the United States, or into the District of Columbia, or exporting from the United States, or any transportation company transporting from one State into another, or from or into the United States any adulterated or misbranded articles of food, liquor or drugs, shall be deemed guilty of a misdemeanor, and upon conviction shall pay a fine of not less than $100 nor more than $1,000 for each offence, and upon conviction a second time may be imprisoned at the discretion of the court." The bill also provides for the creation in the department of agriculture of a division to be known as the food division, equipped with a chief and corps of assistants. In addition, a chemist shall be appointed by the President, with assistant chemists in New York, Boston, Philadelphia, Charleston, Savannah, Mobile, New Orleans, Galveston, St. Louis, Chicago, Cincinnati and San Francisco. The President shall also appoint one food inspector for each State and territory and the District of Columbia, and two assistants may be appointed by the inspector when necessary, whose duties shall be to sample any article of food, drink or drug, and have the same properly verified and analyzed by the food chemists. They shall inspect slaughter houses, and have microscopic and analytical tests made of slaughtered animals, and when they find adulterated articles of food, drink or drugs, or tainted or diseased meat sold or offered for sale in violation of this act, they shall present the facts, properly verified under oath, to the district attorney, who shall immediately proceed to prosecute all violators of this act in the courts of the United States.

SALICYLIC ACID IN BEER.

The Paris Court of Appeals has just declared that the addition of salicylic acid to beer constitutes an adulteration. The following is the decision of M. Muller, the presiding judge: "Although the addition of a foreign substance to an article of food may not always be considered as an adulteration, the case is different when by the admixture the seller deliberately alters the quality of the substance, to the prejudice of the purchaser. I consider that the addition of salicylic acid to beer constitutes a true alteration of the product, and that the admixture modifies the nature of the substance offered to the public, and introduces a new element which does not enter into the ordinary manufacture of beer, but gives to it a different character. I cannot allow that the addition is harmless, and does not act to the prejudice of the purchaser, as provided in the penal law. I consider that it is certainly to the prejudice of the purchaser, as beers of good quality need no addition of salicylic acid to prevent fermentation, and that this addition is really for the purpose of giving to the beer an apparent superiority which it does not possesss. The danger to the public health from salicylated beers has been actually proved by science. Salicylic acid is really a medicine, sometimes useful, often dangerous, the administration of which should be made under the direction of an experienced person, and which the government cannot relegate to merchants acting only for the interest of their business, as the purchaser may thus receive injury to his health by the employment of this pretended preservative agent, which, when taken in doses more or less frequently repeated, may act greatly to his prejudice. Considering, then, that the falsifications resulting from this fraudulent mixture tend to change the nature of the substance sold, to the prejudice of the purchaser, it is decided that the lower court has made a correct interpretation of the law."

EXTENT OF FOOD ADULTERATION.

The House Committee on Agriculture last week in reporting a bill to prevent the manufacture or transportation of adulterated articles of food, drink and drugs made in one State and intended to be sold in another, gave the following endorsement to the views so often expressed by the AMERICAN ANALYST in relation to the dangerous magnitude of the adulteration evil: "This state of facts amounts not only to a premium upon dishonesty, but is a threat to national health. Honest manufacturers and dealers are placed at a disadvantage or are forced into a reckless competition with fraud. Legitimate trade is handicapped and demoralized. It tends to make an Ishmaelite of both manufacturer and dealer. Recent investigations in the Department of Agriculture of cheese deceptions, frauds in milk, adulteration in beer and spirits, in spices and condiments and other things in daily use as food and beverage, emphasize the necessity for prevention or repression of these disreputable practices stimulated by the greed of gain. Liquids, perhaps, even more generally than solids, are subject to this sophistication. Aged brandies are made from diluted alcohol; cheap wines are mixed and manipulated to imitate expensive brands; beers are doctored to avoid the use of expensive hops, and to cheapen the product or simulate some desired quality. Teas are mixed, colored with poisonous minerals, and spent leaves are dried and placed a second time upon the market. The industry which asks for the protection proposed in this bill reaches all the levels of life from the millionaire to the day laborer. It embraces more than all other industries in the country combined, the property of the poor."

AN INTERSTATE PRECAUTION.

The U. S. Senate on August 22d passed a bill appropriating $200,000 to suppress infection, in the Interstate Commerce of the United States. The bill reads as follows: "That in addition to the unexpended balance of the fund heretofore appropriated, the sum of $200,000 is hereby appropriated to be immediately available, to be expended in the discretion of the President of the United States in aid of State or municipal Boards of Health, or otherwise, by such means as he shall deem best, to prevent the introduction of cholera or yellow fever into the United States from foreign countries, or into one State or Territory from another, or into the District of Columbia from any State or Territory, or into any State or Territory from said District."

NOT VERY COMFORTING.

The alleged poisonous character of lead glazed pottery is still being agitated in certain New York publications. The first warning was sounded by the AMERICAN ANALYST, and its position has been bitterly assailed by papers interested in the New Jersey pottery trade. But the retort they make that most of the glassware in common use contains a much larger proportion of the poison than any glaze made is not very comforting.—*Sanitary News.*

CONTINUOUS RAILS.—The discovery of electric welding has suggested the welding together the ends of rails so as to make continuous rail of 1,000 to 1,500 feet in length. The device would save in wear and tear, but would necessitate a special joint to provide for the gap of six or seven inches which would occur between rails of this length under the ranges of North American temperature.

CHEMICAL SCIENCE.

THE EVER-WIDENING FIELD OF DISCOVERY IT PRESENTS.

In reviewing the progress of chemistry during the last hundred years, the advance is perhaps more evident than in any other branch of science. Founded as chemistry is upon the qualities and relations of matter, and dealing with the phenomena of the reactions of its different forms—phenomena which are complicated and mysterious to the highest degree—it requires, for their proper observation and interpretation, elaborate and costly apparatus, as well as an observer with exceptional mental ability. We may smile at the crude ideas of "phlogiston, "fixed" or "vital air," etc., of the last century, but they were an honest attempt on the part of the earlier chemists to formulate the facts observed by them into a definite theory; and, with the crude and clumsy appliances at their command, it is greatly to their credit that their errors were so few in number. What modern chemist would be willing to undertake an investigation of the nature and properties of an unknown gas, for instance, unprovided with a chemical balance or the modern forms of glass and platinum apparatus? Most modern kitchens would supply a better assortment of utensils for such work than could be found in the laboratories of Priestley, Cavendish, Scheele or Lavoisier; but the phenomena were observed and recorded by them with remarkable accuracy; and although their theories of their cause were defective, they were none the less the foundation on which the present science is based.

The modern chemical philosophy is based upon a mass of observations and investigations by chemists in all parts of the world, requiring an amount of labor and perseverance of which few persons have any conception. Two discoveries stand out prominently above the rest—that of the nature of combustion by Lavoisier, and the idea of atomic weights or combining numbers, first determined by Dalton. But these would have been of but little importance without the additional and confirmatory work accomplished by the host of patient workers whose names have remained comparatively unknown.

What has been accomplished by chemistry in the past is well known, and it is a record of which all chemists may well be proud. A rational and comprehensive theory of matter and its laws has been evolved, and the practical applications of the science have effected every branch of industry. Nor do we see any reason why the coming century should not show still greater progress. On the side of theory there is the promise of a rich field for discovery hitherto unworked in investigating the true nature of the so-called elements, and the remarkable connection between their atomic weights and their chemical and physical properties. The more this subject is studied the more probable it seems that, if all forms of matter are not different varieties of one primitive substance, at least the elementary bodies are much more closely connected with each other than has hitherto been considered possible. No one can examine those wonderful diagrams showing the gradual changes in the properties of the elementary bodies with the increasing atomic weight, without feeling that one of the sublimest mysteries of the universe is on the point of being revealed. The fortunate student who first finds the key to the mystery, and solves this modern riddle of the Sphinx, will do for chemistry what Darwin has done for biology, and show that the great law of evolution applies to inorganic as well as organized living matter.

Innumerable other problems are still waiting solution—the actual cause of isomerism, allotropism and dimorphism; the forces which produce crystallization; and the connection between the physical and chemical properties of different substances. In the department of organic chemistry, or the chemistry of the hydrocarbon compounds, the work to be accomplished which is already in view is almost endless. In these numerous substances made up of carbon, hydrogen and oxygen, we have the most diverse properties depending apparently upon the smallest possible variation in composition, or even in those made up of the same kind and number of constituent atoms. In organic substances the actual composition seems to count for very little, while the wide difference between different hydrocarbons apparently depends upon some other cause, which, for want of a better explanation, we call the relative position of the atoms of which the molecule is built up. While this theory perfectly explains the observed facts, it is, on the whole, a not very satisfactory one; and to discover the actual property or attribute of the substances carbon, hydrogen and oxygen, which causes them to combine into the innumerable and widely differing bodies already known to us, is a problem of equal importance with that of the nature of the elements themselves.

Turning to the practical side of the question, the opportunities for the application of chemistry to the advancement of the arts are very numerous. The artificial manufacture of natural products will doubtless be greatly extended. Already the brilliant coloring matter of the madder plant is made artificially in immense quantities, and the magnificent blue of the precious lapis lazuli is exactly copied in the common ultramarine; coal tar furnishes a substitute for sugar in the well-known saccharine; while indigo, glucose, certain alkaloids of the quinine group, and many other valuable substances, have been directly formed from their elements, although as yet at a cost which prevents the practical application of the methods. It is not too much to hope that processes of manufacture may be discovered by which such substances as morphine, quinine, indigo, etc., can be produced at a cost much below the present.

The utilization of waste products is an economical problem not to be overlooked, and the destruction or purification of sewage is also of the highest importance. Substances possessing new and unusual properties are constantly needed in the arts, and the chemist will find a remunerative employment in supplying this need. Perhaps the most important discovery of all, however, would be a means for converting the energy stored up in coal directly into electricity without waste. If this is ever done, it will produce a greater industrial revolution than the introduction of the steam engine. Light, heat and power could be produced at a much smaller cost than at present, and distributed in any direction. Although we can see no way at present by which this result can be attained, it is not impossible, and may become a fact before another hundred years has passed away.

The progress of chemistry has been very great, but it is not a progress towards a journey's end, but into an ever-widening field for discovery which gives a promise of an even more brilliant future.—*Pop. Science News.*

HUMAN HAIR.

EXTENT OF THE TRAFFIC IN THAT COMMODITY IN ENGLAND.

It is not generally known what a large and increasing business is carried on in connection with human hair. It is estimated that at the very least one hundred thousand pounds weight is annually required to meet the demands of the British market. This fact is vouched for by one of the largest dealers in that commodity in England, who also states that in this country alone between £400,000 and £500,000 is spent on the article every year. Hair is imported into this country from Germany, Italy and France, and a little sometimes comes from Sweden or Spain. Hardly any hair is bought here, unless in the form of ladies' combings, and the little that is bought in tresses is obtained from convents, but is usually too short to command a good price. German hair is perhaps the best that can be obtained. It is generally about twenty-four to thirty inches in length, and is of every shade, from flaxen to dark brown. Italian hair grows longer than German, owing to the influence of a warm climate; but it is coarser, and its brown shades are without the reddish and golden tinges which make the German so much admired. French hair is invariably short and coarse, and is almost entirely used for making artificial fringes, and its dark color is also disliked. A rather disagreeable feature of the trade is the traffic in what is called "dead hair," *i. e.*, hair cut from the heads of corpses. For some reason, however, that kind is not of so good quality as hair cut from the heads of living persons, and is not much in favor with dealers, who can distinguish it by its flabby texture and want of gloss. The average weight of the human hair is eight or nine ounces per head, the German head averaging ten ounces, and the Italian and French each six. The wholesale price of long hair ranges from 30s. to £20 per pound, the value varying according to the shade and length. A curious fact in connection with artificial hair is that it gradually changes color, and becomes lighter from the action of air and light. Ladies wearing it often think that it is their own hair that is changing, and cannot understand it. The cause of the change is, the false hair being dead, it receives no nourishment from the nerves. Light, pale and auburn hair each command a much higher price than the common shades of brown, and the most valuable and difficult to obtain is white hair. Age and its usual attendant, illness, render white hair brittle, and it almost always breaks off before getting to any length. The beautiful heads of this hair one occasionally sees are all false, and manufactured by chemical means. Dealers sometimes bleach a light hair with peroxide of hydrogen, but this process is not often successful. Agents for large firms travel on the continent, taking with them silks, laces, ribbons and cheap jewelry, and these they barter for the hair of the peasant women. In England, the pride of the poorest woman rebels against this practice, and it is only on rare occasions that dire distress compels some poor woman to part with what is usually considered the glory of her sex. This sometimes does happen, however, and some years ago a number of women with closely-cropped heads applied to a London magistrate for advice. They had bargained for the sale of their hair, which had been duly cut off, but the wielder of the scissors decamped without going through the formality of paying them. When hair is cut off by the travelling agent, it is regularly placed together at the top, and a wisp drawn from it is twisted around, making the whole into a sort of hank. These hanks are tied together in bundles, and importers of hair in this country receive large sacks of them at a time. Of course the dealers incur a large expense in cleansing and preparing the hair for the retailers, but the profits are large and the trade brisk, thanks to the vanity of that portion of the fair sex who rob the heads of their sisters to embellish their own.—*London New Age.*

BEAUTY'S ENEMY.

HOW, IT IS CLAIMED, WRINKLES CAN BE REMOVED.

A secret to take away wrinkles is to heat an iron shovel red hot, throw on it a spoonful of myrrh in powder, and smoke the face over it, covering person and shovel with a sheet to keep in the fumes. Repeat this three times. Heat the shovel again, and pour on it two spoonfuls of white wine, steaming the face with it three times. This rite is to be repeated night and morning until the effect is gained. Plantain water is very softening for the face, but vaseline rubbed on the skin of the neck and face every night faithfully, will keep wrinkles at a distance for long years after their usual appearance. It should be generously applied, left for the skin to absorb a few minutes, and the excess wiped gently off with a soft cloth. As vaseline is 25 cents a pound, which lasts a year, this is the cheapest as well as the safest general cosmetic. This should always be applied before going into the hot sun for long walks or rides, as well as domestic work in

rooms. The skin must always be washed clean with warm water and fine soap and well dried before using any application, and man or woman always wants to go to bed with face and neck thoroughly and freshly washed. Sleeping with the imperceptible dust of the day in the skin, clogging and griming it, is a great cause of wrinkles. Delightful little toilet bran bags are just now making their appearance, filled with bran, grated olive soap and almonds, which, pressed in water a few seconds, gives a creamy lather to be rubbed on the face, neck and body, and wiped off with a soft towel without rinsing. Those who like can make their own almond meal, as follows: Grated almonds, one pound; flour, the same; powdered orris, one quarter pound; lemon oil, one-half ounce; oil of bitter almonds, one-quarter ounce. The almond powder for the hands is blanched and powdered almonds, one-half pound; grated castile soap, four ounces; orris powder, one ounce; finely powdered pumice stone, three ounces; oil of bitter almonds, one dram. Cocoa butter has long been used by Spanish creole women to nourish and soften the skin and prevent sunburn. Apple pomade is said to whiten the skin. Oil of white poppy seed and of the four cold seeds, each a gill, with an ounce of white wax and three-quarters of an ounce of spermaceti made into a pomade, is applied to the neck and face to ward off wrinkles.

ROSE JARS.

A DOMESTIC LUXURY WITHIN EVERYBODY'S REACH.

A delightful perfume for halls and parlors in dwelling houses or hotels can be easily procured at this season of the year, and it is such a pure yet delicious odor that it charms every one. It is simply a rose jar, which should be opened for about one hour every morning and then carefully closed. A writer in one of our English contemporaries describes the best method for stocking the jar, and, in doing it, suggests that the preparation of the rose stock should be detailed to the care-taking member of the family, who never forgets anything. Gather the rose petals in the morning; let them stand in a cool place; toss them up lightly for one hour to dry; then put them in layers, with salt sprinkled over each layer, in a large covered dish. A glass butter dish is a convenient receptacle. You can add to this for several mornings till you have enough stock—from one pint to a quart, according to the size of the jar. Stir every morning, and let the whole stand for ten days. Then transfer it to a glass fruit jar, in the bottom of which you have placed two ounces of allspice coarsely ground, and as much stick cinnamon broken coarsely. This may now stand for six weeks, closely covered, when it is ready for the permanent jar, which may be as pretty as your ingenuity can devise or your means purchase. Those with double covers are the best; and very pretty ones in the blue-and-white Japanese ware, holding over a quart, can be bought for a few shillings. Have ready one ounce each of cloves, allspice, cinnamon and mace, all ground (not fine); one ounce of orris root, bruised and shredded; two ounces of lavender flowers and a small quantity of any other sweet scented dried flowers or herbs. Mix together, and put into the jar in alternate layers with the rose stock and a few drops of oil of rose, geranium or violet, and pour over the whole one-quarter pint of good cologne. This will last for years, though from time to time you may add a little lavender or orange flower water, or any nice perfume, and some seasons a few fresh rose petals. You will derive a satisfaction from the labor only to be estimated by the happy owners of similar jars.

ELECTRICAL PROGRESS.—The Westinghouse Electric Company has recently perfected an incandescent lamp which is expected to burn from 2,000 to 3,000 hours without discoloration.

DOMESTIC DIETETICS.

SPECIALLY PREPARED, FROM PRACTICAL TESTS, FOR THE LADY READERS OF THE "AMERICAN ANALYST."

SEASONABLE FOOD.

September.

MEATS. — Beef, mutton, lamb, veal, ham, kidneys, liver, venison.

GAME AND POULTRY.—Pigeon, chicken, duck, woodcock.

FISH.—Bass, blackfish, bluefish, clams, cod, crabs, eels, flounder, halibut, herring, lobster, mackerel, mussels, porgie, prawn, rockfish, salmon, trout, sea bass, sturgeon, turtle, white fish, whiting.

VEGETABLES. — Beets, beans, cabbage, carrots, cauliflower, corn, cucumbers, egg plant, garlic, lettuce, onions, parsley, parsnips, potatoes, radishes, rhubarb, savoy, shallots, spinach, squash, tomatoes, turnips.

FRUIT.—Apples, bananas, blackberries, gooseberries, huckleberries, grapes, melons, oranges, peaches, pears, pineapples, plums, raspberries, currants.

PRACTICAL RECIPES.

SOFT CLAM SOUP.—Cut off and chop fine the tough parts of two bunches of soft clams. Put this into a saucepan with a quart and pint of cold water; cover, and let it boil about ten minutes; take from fire and strain. Put the liquid over the fire again, and when boiling add pepper, salt, butter and a little flour and water to thicken it. When ready to serve, take from the fire and and add half a teacup of milk.

FRIED SOFT CLAMS.—Take the soft parts of the clams left from the soup and dip them in egg and cracker crumbs, and fry to a rich brown in very hot lard. Sprinkle with salt and pepper and serve at once.

QUICK BISCUITS.—Mix a quart sweet milk with half a cup melted butter, stir in a pinch of salt, two teaspoonfuls Horsford's baking powder and flour enough for a stiff batter. Have the oven at a brisk heat. Drop the batter, a spoonful in a place, on a buttered plan. They will bake in 15 minutes.

BOILED TROUT.—Select good-sized trout. Put two tablespoonfuls of vinegar into enough boiling water to cover the fish; add a teaspoonful of salt, and boil for 25 minutes. Serve with a drawn butter gravy, made by thickening milk with a little flour, and boiling it by placing the basin in a pan of boiling water. Add a large piece of butter just before you serve it. Capers can be added to this sauce, or parsley, and the latter should be placed about the fish.

VEGETABLE PIE. — Cook some green peas, young broad beans, small carrots and tender French beans, separately, in cream sauce; place in a baked pie case, divided into compartments by thin pieces of pastry, and serve. In winter preserved vegetables may be used for the pie.

CREAM SAUCE.—Put a lump of butter the size of half an egg in a saucepan; add three tablespoonfuls of flour, and when they are thoroughly mixed add cream or milk enough to reduce it to the thickness of thick cream. Season to taste.

FROSTED FRUIT.—Take plums, apricots, grapes, currants, or other such fruits; dip them in the beaten white of an egg; then roll each in finely powdered sugar and lay on an inverted sieve on which clean white paper has been laid. Put them in an oven slightly warm, or on top of the stove to dry. Frosted fruits are pretty for garnishing dessert dishes or cakes, or may be mixed with other fruits.

CHOCOLATE ECLAIRS.—Put an ounce of butter in a saucepan on the fire with about six tablespoonfuls of water. When beginning to boil add about two and a half ounces of flour, stirring with a wooden spoon about five minutes; then remove from the fire and add, one by one, four eggs, stirring rapidly until each is well mixed; then put your mixture into a cornucopia of stiff paper, with a hole in the point, through which press it on a pan, forming little shapes similar to lady fingers. Send them to a gentle oven for about twenty minutes, or until firm; let them become cold; then make an incision in them the length of each through the middle. Put in a saucepan two eggs, two tablespoonfuls of corn starch, two ounces of sugar, a glass of milk, a tablespoonful of vanilla, and stir all together on the fire. Just before beginning to boil remove from the fire and let it become cold; then fill the inside of your eclairs with your cream. Melt an ounce of chocolate with a tablespoonful of water; boil half a pound of sugar as the foregoing; mix thoroughly with your chocolate, with which cover your eclairs.

EAST END SILVER CAKE.—One and a half cups sugar, one and a half cups flour, half cup butter, half cup sweet milk, half cup corn starch, one and a half teaspoonfuls Horsford's baking powder, and whites of six eggs. Flavor with lemon or bitter almond.

CRAB-APPLE SWEET PICKLE.—Heat a pint of vinegar and a pound of sugar, mace and cloves together, and pour over the crab-apples for six mornings. Plums, cherries and peaches make delightful pickles done in that way.

FILBERT KISSES.—Beat one pound of pulverized white sugar with the whites of eight eggs, over a slow fire, until very light; then add four ounces of blanched filberts, cut fine; lay them out on white paper, and bake in a slow oven. Sweet spice are delicate little accompaniments to the mulled wine or cordial. Mix cassia, grated nutmeg, mace and cloves, of each one part, in quantity desired, to two parts of fine powdered sugar and sufficient honey to be not too thick, and bake in a manner similar to the kisses.

COW BOY SKILL.—A rare exhibit on of horsemanship was displayed on the streets in Silver City recently. A cowboy who had filled his tank with liquid lightning, offered to bet $50 that he "could ride anything that wore hair." Another cowboy took the bet, and brought forth a cayuse famous for bucking. The drunken cowboy was not slow in mounting and while the cayuse was rearing and pitching, crossed both of his legs around the horn of the saddle, then quietly rolled a cigarette and sat and smoked as contentedly as though he were in a rocking chair. When the horse ceased to pitch, the money was turned over and most of the boys took theirs straight. As the rider drained his poison he quietly remarked, "Well (hic) I thought you had something hard to ride."—*Miles City, Mont. Stock Growers' Journal.*

A TURTLE FARM.—It occurred to an enterprising Yankee that turtle farming might be made to pay, and he accordingly established a terrapin farm, which is situated about 60 miles from Mobile. An enclosure of three acres in extent contains several immense ditches 100 feet in length and 10 feet in width, and these are filled with salt water by two canals. In these ditches about 30,000 turtles are domesticated. In winter they lie imbedded in the mud, and are very convenient creatures to keep, seeing at this season they never eat any food. It is not astonishing, therefore, to hear that these turtles cost no more than $1.00 per season to feed, and that New York cheerfully pays as much as $17.00 per dozen for them.

ORIGIN OF LEAP YEAR.—The origin of Leap Year is not definitely known, but a law enacted by the Parliament of Scotland in the year 1288 is doubtless the first statutory recognition of the custom. The law was as follows: "It is statut and ordaint that during the reine of her Maist Blissit Megestie, ilk fourth year, known as Leap-Year, ilk maiden ladye of baith high and low estait shall hae liberty to bespeak ye man she likes, albeit, gif he refuse to tak hir to be his wyfe, he shall be mulcted in ye summé of ane undis or less, as his estait moit be, except and awis gif he can mak it appear that he is betrothit to aine ither woman, that he shall then be free."

THE SCIENTIFIC COUNTERFEITER.

One of the odd features of Christian society is that while the "uttering of base coin" is a felony punished with the greatest severity, the manufacture and sale of counterfeits of things of far higher value than a simple coin—of things involving life and death—are, in most countries, allowed to go on without interference by either the courts or the police. In other civilizations the case is very different. In Egypt and Morocco, where, under the stress of losing business, the bakers one year made a bread of unwholesome ingredients, every offender who was convicted was nailed by his ear to the wall of the public square, and there kept on exhibition for forty-eight hours. In China and Tonquin a man found guilty of selling, as a certain remedy or as medicine, something which has no medicinal value, is bastinadoed or decapitated, according to the amount of injury done by his wares.

On account of this singular laxity of law and justice in Christendom, a premium is offered to all who will deceive society by making and selling sophisticated goods. While no one dreams for a second of counterfeiting the public currency, and while the term counterfeiter is a word of universal reproach and ignominy, yet thousands upon thousands of men, who are regarded and regard themselves as God-fearing, law-abiding citizens, gain a livelihood by manufacturing and vending counterfeits of things in general use. In the produce exchange the merchant sells oleomargarine for butter, and cotton seed oil for olive oil; in the wine market the dealer passes off aniline colored decoctions for Chianti, and mixtures of oils, fusel and alcohol, for fine brandy. Worst and most ominous of all, worthless or deleterious drugs are substituted for the great standard medicines of the world.

For example, Ayer's Sarsaparilla, a medicine which is truthfully and universally known as the best and only successful blood purifier ever discovered by medical and chemical science, is made the subject of a thousand imitations and sophistications. The imitators exercise all their ingenuity to produce a liquid which shall resemble in taste, odor, color and other physical qualities the genuine preparation of Ayer, and foist this upon not a few as equal if not superior to the original, whose merit is everywhere recognized and appreciated. They attempt to utilize the sacredest feelings of mankind, love and sympathy for the sick and ailing. To him or her who comes for that which will restore health and strength and stay the wasting hand of disease, they give a worthless compound or something which deepens and aggravates the ills already existing. Every sale made by them is a triple wrong, a wrong to the buyer, who parts with his earnings for a valueless compound; a wrong to the sick, who increases his ills by using it, and a wrong to the genius and skill which made Ayer's Sarsaparilla the greatest remedy of the age.

In the meantime, and until wiser and better laws are passed whereby the counterfeiter of foods and medicines shall be put upon the same plane as the "utterers of base coin," the consumer should be upon his guard and see that, whenever he needs sarsaparilla, he receives Ayer's preparation and nothing else. No one can be deceived, in making a purchase, who pays the slightest attention to the wrapper on the bottle, and no druggist would risk his custom and reputation by selling as *Ayer's* Sarsaparilla that of any other.

BUSINESS NOTES.

INFANTILE CONVULSIONS.

I have for sometime been using Syr. Brom. Comp. (Peacock), with the very best results in every variety of reflex nervous trouble which has came under my observation, a few of which I enumerate: Puerperal convulsions, infantile convulsions from any cause, tinnitus aurium, and general nervousness from the effects of quinine, sleeplessness, delirium tremens, etc., etc. It is a better remedy than any one of the bromides alone, and much safer in my estimation than any one of them with chloral hydrate. A. A. ROWLAND, M. D.
West Plains, Mo.

HORSFORD'S ACID PHOSPHATE,

INVALUABLE.

Dr. B. A. Cable, Dauphin, Pa., says: "I find it invaluable in all cases for which it is recommended, and I cheerfully attest my appreciation of its excellence."

SOAP POWDERS.

A writer in the *Western Druggist* publishes a series of analyses of soap powders showing that the best consist of powdered soap and carbonate of soda, and putting Pyle's Pearline at the head. After all the best evidence of quality is furnished by experience. Those of our friends who have used Pearline tell us that it does its work well and what is all important neither injures the fabric nor the skin of the laundress. We have obtained a photograph of an ordinary cotton fabric which has been constantly washed with Pearline for over a year and shows no injury. We shall publish an electrotype of this in our next number.

BROMO SODA:—I have just returned from a trip to the West Indies and have had occasion to prescribe your Bromo Soda in cases of sea sickness and headache. I have found excellent results from its use.
HENRY P. GEIB, M. D.

AN EXPENSIVE WORK.—The amount expended to date on the Panama Canal is $177,910,000, and it is estimated that it will require $230,000,000 and four years more for its completion.

A CONVENIENT COIN.—It is stated that the nickle 5-cent piece may be used as a unit of measure in calculating by the metric system. It is exactly two centimeters in diameter and weighs five grammes. Five of the coins placed edge against edge give the exact length of a decimeter.

DUST IN AIR.—Recent investigations made by John Aitken show that outside air after a wet night contained 521,000 dust particles to the cubic inch; outside air in fair weather contained 2,119,000 particles in the same space, showing that rain is a great purifier of the atmosphere. The air of a room was found to contain 30,318,000 particles in the some space, that near the ceiling containing 83,346,000 particles to the cubic inch. The air collected over a Bunsen flame contained no less than 489,000,000 particles to the cubic inch. The numbers for a room were got with gas burning in the room and at a height of four feet from the floor.

A WONDERFUL GUN—"The Maxim machine gun," says the *Popular Science Monthly*, "has a capacity of firing 600 rounds a minute, or at least three times greater than that of any other machine-gun. It has only a single barrel, which, when the shot is fired, recoils a distance of three-quarters of an inch on the other parts of the gun. This recoil sets moving the machinery, which automatically keeps up a continuous firing at the extraordinary rate of ten rounds a second. Each recoil of the barrel has therefore to perform the necessary functions of abstracting and ejecting the empty cartridge, of bringing up the next full one and placing it in its proper position in the barrel, of cocking the hammer, and pulling the trigger. The barrel is cooled with a water-jacket, is adjustable in every direction, and has a maximum range of eighteen hundred yards. The gun weighs only 106 pounds; it can be taken apart, folded up, and put together again, the latter operation being possible in ten seconds."

[ADVERTISEMENT.]

A CARD FROM REED & CARNRICK.

An anonymous publication in Boston claiming to be a free lance that "neither threats nor bribes can suppress" has devoted considerable space to a so-called "*exposé*" of our preparations. The statements of this publication have been considered by us as too unscientific and absurd to merit our attention. The medical profession are competent to judge for themselves regarding the value of our products, and chemists of the highest standing in the world have often certified to their value and reliability. Investigation of our methods of manufacture has always been courted by us, because we have never had anything to conceal from the medical profession. We are induced, however, to relate our experience with this publication in the shortest manner possible.

We were advised in their May issue that they had decided to publish analyses of our preparations which were prejudicial to our interests. Not knowing anything of its character, we sent a representative to interview the proprietors, and to ascertain in what manner they claimed we had laid ourselves open to criticism. This was done in good faith, knowing the soundness of our position, and presuming the managers of the journal were actuated by perfectly honest motives.

To our surprise we found the publication was edited anonymously, and that the "chemist" was also acting under an assumed name. Our representative, after spending some days in inquiry, finally located the disinterested (!!) gentleman who runs the journal. Acting under our instructions, he asked for information regarding their proposed attack. The several interviews which followed resulted in an ultimatum which they cunningly insisted must be *a proposition from us* to the following effect:

First—The payment of $2,500 to the editor to cover the loss caused by suppressing the proposed article.

Second—The employment of the anonymous chemist, who was to be paid liberally, to visit our laboratory and "analyze" our products, promising that if he found we were subject to criticism we were to have an opportunity to correct our errors; or, in other words, if the methods of conducting our business did not meet with his approval, we were to have an opportunity to change them to coincide with his views. This seems high-handed enough, and, while it appears to be within the law, yet savours exceedingly of blackmail cloaked under the most praiseworthy motives. We believe the object of the publication is to induce manufacturers to advertise in order to prevent an attack. Also to court an offer for the suppression of the threatened exposure, and in case these plans fail to sell a large edition to competing firms for distribution. To any practitioner who will write us for a detailed answer to these attacks, we will cheerfully write in full controverting every statement made.

We desire to add, in conclusion, that we are confident the attack was abetted or inspired by one of our competitors and a certain person interested in their products. We shall probably present the matter in full to the attention of the medical profession in order to show to what condition animosity engendered by rivalry in business can bring the human species, even though so doing may tend to directly inculpate a certain professor who appears to be very much interested in the business of one of our competitors. REED & CARNRICK.

How to Cleanse Chamois.—The *Jewellers' Circular* gives the following process for cleaning soiled chamois: Make a weak solution of soda and warm water; rub plenty of soft soap into the leather, and allow it to remain in soak for two hours; then rub it well until quite clean. Afterward rinse it well in a weak solution composed of warm water, soda and yellow soap. It must not be rinsed in water finally, for then it would be so hard when dry as to be unfit for use. It is the small quantity of soap left in the leather that allows the finer particles of the leather to separate and become soft like silk. After rinsing, wring well in a rough towel, and dry quickly; then pull it about and brush it well, and it will become softer and better than most new leather. In using a rough leather to touch up too highly polished surfaces, it is frequently observed to scratch the work. This is caused by particles of dust, and even hard rouge, that are left in the leather; and, if removed by a clean brush containing rouge, it will give the brightest and best finish.

Night Blindness.—The night movements of the Russian troops have recently been rendered difficult by the number of soldiers attacked with hemeralopia (night blindness). It is well known that this affection is due generally to a lack of proper food. Meissner saw in Podolia an epidemic of this disease produced during a religious excitement, when bread was the principal article of diet, which disappeared when animal food was again taken.

A Miniature Dynamo.—The smallest electric plant in the world is claimed for the one at the Morton-House, New York. It consists of a Corliss engine, Edison dynamo, shafting, pulleys, incandescent lights, etc, It is inclosed in a glass case 3 feet long, 1½ feet wide, and 2 feet high.

Cutting Glass by Electricity.—The process of cutting glass tubes by electricity has succeeded admirably. The tube is surrounded with fine wire, and the extremities of the latter are put in communication with a source of electricity. It is necessary that the wire should adhere closely to the glass. When a current is passed through the wire the latter becomes red hot and heats the glass beneath it, and a single drop of water deposited on the heated place will cause a clean breakage of the glass at that point. The thicker the tube the cleaner the fracture.

A Simple Barometer—A very good and sensitive barometer may be made by glueing together strips of red cedar and seasoned pine. A strip of cedar about thirty inches long, one and one-half inches wide, and one-eighth of an inch thick, is cut with the grain, and to one side of it must be glued strips of pine of equal thickness, with the grain running across that of the cedar. This combination is set on end, and will, according to the state of the weather, be found to have bent over on one side or the other, and this may be determined by trial.

To Preserve Eggs.—The *Magnet* gives as an infallible preservative of eggs: "Take a teacupful of salt, and lime to the size of an egg, and pour boiling water on them. When cold, drain off the liquor and put it on the eggs. If too strong, there will be a crust on top; if so, add more water. This is for two gallons of liquor. There is no receipt that beats this, and it can be relied upon. Eggs put down in August and used in April are just as fresh and make just as nice frostings as newly-laid ones."

To Keep a Room Cool.—A correspondent of the London *Carpenter and Builder* gives a very useful hint as to how to make a room tolerably cool during hot weather. The great cause of heat in a room is, of course, the glass, which, under the sun's rays, will become too hot to bear pressing with the fingers. It is shown that those who cannot enjoy the luxury of an outside sun-blind can extemporize a very good substitute by simply lowering the upper half of the window frame, and turning the curtain outside. This not only screens the window, but creates a strong draught between the panes and the linen, and thus absolutely makes the glass cold. If there is any wind, the blind can be kept steady by drawing in the cord and tassel, and shutting the lower half of the window frame tight down upon it.

Electricity and Heat.—At a recent meeting of the French Physical Society, Sir William Thomson was present, and stated that, according to his determinations, the rate of diffusion of electricity was a hundred and ten times as rapid as that of heat in the best conductors.

Malleable Bronze.—Domier has discovered that bronze is rendered malleable by adding to it from one-half to two per cent. of mercury.

Spanish Pharmacists.—Barcelona, Spain, is to have a medical and pharmaceutical congress. It is called to convene on September 9, and will remain in session six days. The Industrial Exposition of Spain will be in full blast at that time, and it is supposed will draw enough pharmacists and doctors to Barcelona to justify the calling of the congress.

A New Adulteration.—The latest trick of the unprincipled guild of sophisticators which infest Europe as well as America is the adulteration of petroleum illuminating oil with fusel oil refuse from rectifying houses and distilleries. A large quantity of this dangerous and nauseous smelling oil is now in the market in Germany.

Ivory from Potatoes.—Much of the so-called ivory now in use is simple potato. A good, sound potato washed in diluted sulphuric acid, then boiled in the same solution, and then slowly dried, is all ready to be turned into buttons, poker chips and innumerable other hings that ivory was used for once up on a time.

An Interesting Flüid.—Dr. Juneman, an Austrian chemist, has invented the most destructive fluid known to man. This fluid, when brought into contact with the air after the explosion of a shell in which it is held, becomes a gas that destroys all living things within its reach, melts metals and sets everything inflammable on fire.

The Absinthe Fiend.—The celebrated absinthe factory of Pernod was recently sold to a M. Picard for 5,500,000 francs (about $1,045,000) cash. This factory turns out daily 1,000 cases of one dozen quart bottles each of absinthe. The greater part of this is consumed in Paris and the larger cities of France, the army officers being the greatest users of the poisonous compound. Can we wonder at the vagaries of French politics.

An Inch of Rain.—An "inch of rain" means a gallon of water spread over a surface of nearly two square feet, or a fall of about 100 tons on an acre of ground.

Subscriptions $1 per year. Now is the time o subscribe.

Horsford's
ACID PHOSPHATE.

A preparation of the phosphates of lime, potash, magnesia and iron, and phosphoric acid, in solution, that is readily assimilated.

Especially recommended in all cases where the use of phosphoric acid or the phosphates is indicated, such as exhaustion of the physical, nervous and cerebral systems, gastric and liver derangement, gravel, and other calcareous deposits, cholera, scurvy, consumption, etc.

As a menstrum for the administration of strychnina, morphina, quinina, and other organic bases which are usually exhibited in acid combination, it is unsurpassed.

It makes a delicious drink with water and sugar only, and harmonizes with such stimulants as are necessary to prescribe.

Dr. G. F. Wilber, Nashua, N. H., says: "It is a very elegant method of using phosphorus."
Dr. T. C. Smith, Charlotte, N. C., says: "I attach the highest importance to it as a therapeutic agent, of well-defined and specific value."
Dr. C. Earle, Pontiac, Mich., says: "I do not hesitate to recommend it to the confidence of the profession."
Dr. T. B. Porter, Freeport, Ill., says: "It is an excellent therapeutic agent."
Dr. I. W. Martin, Des Moines, Ia., says: "I take pleasure in adding my testimony as to its therapeutic value."
Dr. E. Brown, Omaha, Neb., says: "I find it a very useful remedy."

Send for descriptive circular. Physicians who wish to test it will be furnished a bottle on application, without expense, except express charges. Prepared under the direction of Prof. E. N. Horsford, by the

Beware of Substitutes and Imitations. **RUMFORD CHEMICAL WORKS, PROVIDENCE, R. I.**



Pearline
Washing Compound

has become more popular with the women of this land—in less time—than anything ever invented for the household.

The intelligent rich use Pearline because of the superior results obtained—*perfect cleanliness.*

The intelligent middle class—because of the superior results, and the fact that, in doing away with the rubbing, it does away with the worst of the wear and tear on clothing and paint—*makes a saving.*

The intelligent poor—because it takes the drudgery out of their hardest work—a delicate woman can do a large wash with the aid of Pearline—*know it's better than soap.*

PEARLINE will wash clothes—clean paint, china, silver, glassware, windows, oil paintings, carpets without taking up—better—in less time and with less labor, than anything known; besides it is absolutely harmless.

Beware Peddlers and some unscrupulous grocers are offering imitations which they claim to be Pearline, or "the same as Pearline." IT'S FALSE—they are not, and besides are dangerous. PEARLINE is never peddled, but sold by all good grocers. Manufactured only by JAMES PYLE, New York.

SILK AND SATIN RIBBONS FREE!

LADIES, THIS IS FOR YOU!



A rare gift for the ladies. Save much money and secure the best! Every lady knows and appreciates, the privilege of having a few remnants of ribbon, handy for the thousand and one tasty and useful purposes for which such goods are used, and which they, the ladies, use to such advantage. To purchase what is wanted at the usual prices such goods are sold for, would create a large bill of expense, and therefore debars a great many from indulging their tastes in this direction. Realizing that there were thousands upon thousands of remnants of ribbons among the large importing houses of America which they would be willing to dispose of in bulk, for a small fraction of their cost, to any one capable of purchasing largely, we instituted a search, resulting in our obtaining the entire stock of **Silk** and **Satin Ribbon Remnants** of several of the largest of these houses, who imported the finest goods. These goods may be depended upon as superior to anything to be found, except in the very best stores of America. Yet they are given away **free**; nothing like it ever known. A grand benefit for all the ladies; beautiful, elegant, choice goods absolutely **free.** We have expended thousands of dollars in this direction, and can offer an immensely, varied, and most complete assortment of ribbons, in every conceivable shade and width, and all of excellent quality, adapted for neck-wear, bonnet strings, hat trimmings, bows, scarfs, dress trimmings, silk quilt work, etc., etc. Some of these remnants range three yards and upwards in length. Though remnants, all the patterns are new and late styles, and may be depended on as beautiful, refined, fashionable and elegant. **How to get a box containing a Complete Assortment of these elegant ribbons Free. The Practical Housekeeper and Ladies' Fireside Companion,** published monthly by us, is acknowledged, by those competent to judge, to be the best periodical of the kind in the world. Very large and handsomely illustrated; regular price 75 cts. per year. Send **35** cents and we will send it to you for a trial year, and will also send **free** a box of the ribbons; 2 subscriptions and 2 boxes, **65** cts.; 4 subscriptions and 4 boxes, **$1.** One-cent postage stamps may be sent for less than $1. Get **3** friends to join you thereby getting 4 subscriptions and 4 boxes for only **$1**; can do it in a few minutes. The above offer is based on this fact:—those who read the periodical referred to, for one year, want it thereafter, and pay us the full price for it; it is in after years, and not now, that we make money. We make this great offer in order to at once secure 250,000 new subscribers, who, not now, but next year, and in years thereafter, shall reward us with a profit, because the majority of them will wish to renew their subscriptions, and will do so. The money required is but a small fraction of the price you would have to pay at any store for a much smaller assortment of far inferior ribbons. Best bargain ever known; you will not fully appreciate it until after you see all. Safe delivery guaranteed. Money refunded to any one not perfectly satisfied. Better cut this out, or send at once for probably it won't appear again. Address,

H. HALLETT & CO., PUBLISHERS, PORTLAND, MAINE.

A GENERAL ALARM.—Omaha Man: "Went to a spiritual seance down in Arizona, eh? Anything happen?"

Arizona Man: "Well, yes. The medium went into a trance, and then announced that he was the spirit of a man who had been murdered, and that the murderer sat in the audience."

"Well, well. Did anybody run?"

"We all ran."—*Omaha World.*

A STRAIGHT ANSWER.—Kentucky Teacher (of infant geography class): "Tommy Blood may tell us what a strait is?"

Tommy Blood: "It's just the plain stuff 'thout nothin' in it."

LEA & PERRINS' SAUCE.

Lea & Perrins', the original and genuine Worcestershire Sauce, has been before the public over a half a century. Like all popular favorites it has long been the standard of comparison and the pattern for counterfeiters who not being able to imitate its excellence offer to the public imitations in bottling, labels and style of putting up. They dare not counterfeit the signature of Lea & Perrins which is on the red label of every genuine bottle, and of which this is a facsimile.

Lea & Perrins

To be sure of obtaining the genuine article, see that the above signature is on the label.

Natural Lithia Water.

FARMVILLE LITHIA WATER

FROM VIRGINIA.

—Not only Relieves, but—

CURES

Bright's Disease, Kidney Troubles of all Kinds, Rheumatism, Rheumatic Gout, Dyspepsia, Bladder Troubles, Diabetes, Calculi, Albuminuria. Without Taste or Odor. An Unapproachable Record in Results.

Sold by HAZARD, HAZARD & Co., Fifth Avenue Hotel, and other first-class Pharmacists. Pamphlet free upon application.

FARMVILLE LITHIA SPRINGS CO.,

298 Broadway, New York, and Philadelphia.

ANALYZE "MONON" Resolutions!!

Whereas, The Monon Route wishes to make known to the world that it has the finest system of Pullman Buffet Sleepers and Chair Cars, running between Chicago and Louisville, or Chicago, Indianapolis and Cincinnati;

And Whereas, This makes it in fact the double connecting link of Pullman travel between the winter cities of Florida and the northern summer cities; then

BE IT RESOLVED, That, before starting on a trip, be sure and address E. O. McCormick, Gen'l Pass. Agent, 185 Dearborn Street., Chicago, for rates, etc.

OUR SPECIALTIES ARE

Choice Bottled Ciders

—AND—

Pure Cider Vinegar,

For Hotel and First-Class Trade.

T. P. ROGERS & SON,

370 to 376 Washington Street,

NEW YORK.

Subscriptions $1 per year. Now is the time to subscribe.

SPECIAL HARVEST EXCURSIONS.

The Northern Pacific R.R. announces a series of five special Harvest Excursions from St. Paul, Minneapolis, Duluth and Ashland to principal points in Minnesota, Dakota and Montana during August, September and October. Parties contemplating a trip for pleasure, business, or with a view of selecting a new home can avail themselves of rates lower than ever before announced to visit the wonderful country tributary to the Northern Pacific R.R.

Tickets will be on sale at St. Paul, Minneapolis, Duluth and Ashland on August 21st, September 11th and 25th, and October 9th and 23d, limited to thirty days from date of sale, and good for stop-over on going passage. These rates to Montana points are about one cent per mile each way, and in some cases about half of the one way fare for the round trip.

Connecting lines east and south of St. Paul, Minneapolis and Duluth will sell tickets in connection with these excursions at one fare for the round trip.

The dates named will be a very opportune time to visit the wheat fields of Minnesota and North Dakota: also to see the cattle ranges of Montana. Everybody should bear in mind that the Northern Pacific R.R. is the short and direct line to principal points in Montana, and the only line running either dining cars, Pullman sleeping cars, or colonist sleeping cars to Fargo, Grand Forks, Fergus Falls, Wahpeton, Jamestown, Helena, and principal points in Northern Minnesota, North Dakota and Montana.

For rates and other information apply to Chas. S. Fee, General Passenger and Ticket Agent, St. Paul, Minn., or nearest ticket agent.

THE TORSION

Braided Wire Mattress.

At all times a thoroughly ventilated and perfectly clean mattress, it cannot absorb odors, or retain exhalations or disease germs.

D. HAYES AGNEW, M. D., Prof. of Surgery, University of Pennsylvania, says:

"The Torsion Braided Wire Pillow and Mattress I regard as superior to anything of the kind now in use; well suited for either private or hospital use.

Prof. WM. H. PANCOAST, late Professor of Anatomy, etc., in Jefferson Medical College, now Professor of Anatomy and Clinical Surgery in the Medico-Chirurgical College of Philadelphia Hospital Surgeons, says:

"I have used in my surgical practice your Braided Wire, in the form of mattresses, pillows for the head and body, and short pillows for the arm and leg when injured. I find them most admirable, cool and light, yet affording perfect and elastic support.
I have saved a patient from bed sores by the use of the Braided Wire mattress."

WM. H. FORD, President Board of Health, Philadelphia, says:

"I have used the Torsion Braided Wire Mattress with great satisfaction, it is light and therefore easily handled; it is elastic and very comfortable. The case can be easily removed to afford a complete airing, a feature of great importance from a health point of view.
It is an invention of great usefulness.

For descriptive circular and price list, send to

The Torsion Braided Wire Upholstering Company,

1017 CHESTNUT ST., PHILA.

"BILLET"

are

Carefully Selected

French Sardines,

Packed in Choicest Olive Oil.

AT ALL LEADING GROCERS.

Any Retail Druggist in the United States who desires to obtain Advertising Matter, Show Cards, Signs, etc., which will assist and instruct him in the sale of Harriet Hubbard Ayer's Recamier Toilet Preparations and Vita Nuova, should address THE RECAMIER MFG. CO., 52 and 54 Park Place, New York City.

UNEQUALLED Ask your Grocer for, and insist on having, LEA & PERRINS' Sauce, "The Worcestershire." It is known throughout the whole civilized world as the Best and most Delicious Sauce. DELICIOUS.

SCOTCH MARMALADE, Jams, Fruit and Wine, Jellies, &c.
By James Keiller & Son, Dundee.

SCOTCH BISCUITS, Albert, Water, and Oat Cake,
By Robert Middlemass & Son, Edinburgh.

RACAHOUT des Arabes, by De Langrenier, Paris.

BAY WATER, West India, (J. D. S. brand), in cases, one dozen bottles.
Sold by all first-class Grocers.

JOHN DUNCANS' SONS, 43 Park Place, New York. Agents for the United States.

Robert Gordon's
TRADE MARK.

SPICED · SEA · FOODS
(IN GLASS.)

OYSTERS, LITTLE NECK CLAMS, MUSSELL, SHRIMP, LOBSTER, Etc.,

Packed in 8 and 16 oz. Jars. Guaranteed to be strictly Pure.

MADE OF THE FINEST MATERIALS.

—ALSO,—

ROBERT GORDON'S CONDENSED CLAM CHOWDER,
In 3-lb Cans. Cheapest and Best in the Market.

MANUFACTURED BY

JONES, GORDON COMPANY, Limited,
204 West Street, New York.



GOLD MEDAL, PARIS, 18[illegible]
BAKER'S
Breakfast Cocoa.

Warranted *absolutely pure Cocoa,* from which the excess of Oil has been removed. It has *three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup.* It is delicious, nourishing, strengthening, easily digested, and admirably adapted for invalids as well as for persons in health.
Sold by Grocers everywhere.

W. BAKER & CO., Dorchester, Mass.

Sura Cura ROBINSON'S SURE CURE FOR
RHEUMATISM
And NEURALGIA,

And remedy for diseases arising from an impure state of the blood. An antidote for MALARIA. Price 50 c. and $1. Sent by mail on receipt of price.
Send for Circular.

R. W. ROBINSON & SON,
184 Greenwich Street,
NEW YORK.

Sura Cura

ESTABLISHED 1857.

J. H. CUTTER,
OLD
BOURBON AND RYE WHISKIES.

We are the Sole Owners and Proprietors of this Celebrated Brand of Whiskey.

C.P.MOORMAN & CO. LOUISVILLE, KY.

We Guarantee the Superior Quality and Absolute Purity of every Barrel of Whiskey sold by us under this Brand.

W. P. FESSENDEN, Agent for N. E. States, Maryland and Penn., 11 Central St., Boston.

Good Subscription Agents wanted by AMERICAN ANALYST.

ESTABLISHED 1823.

ALEX. YOUNG CO., Limited,

DISTILLERS OF

Y. P. M. WHISKIES.

DISTILLERY, - - - Nos. 408, 410, 412 and 414 South Street.
MALT HOUSE, - Nos. 416, 418, 420, 422 and 424 South Street.
STORE, - - - - - - - - - - No. 700 Passyunk Avenue.

PHILADELPHIA, PA.

New York Office, – 78 Wall Street.

FOR SALE BY

PARK & TILFORD, and ACKER, MERRALL & CONDIT.

THE LABORATORY.

To Inventors, Manufacturers and Applicants for Patents

The AMERICAN ANALYST may be consulted upon all matters involving theoretical or applied chemistry. Advice and opinions given. Analyses and assays made. Patents perfected and secured. Terms reasonable.

Address, AMERICAN ANALYST,
19 Park Place, N. Y.

A SET BACK TO ALL PREVIOUS INVENTION.

EDUCATION Quick vs. Old System **Dead.** Education almost by machine process. As mind is above matter so is this method (simply by seven words) above all previous invention of whatever kind. **A Wherewithal Book, $1.00 Form.**
We **guarantee** you will be more than **satisfied.**
If you want this method remit $1 00 by Registered Letter or send Check and receive by mail a great **possibility** from the sole originators and proprietors of the **New Education,**
WHEREWITHAL COMPANY Philadelphia, Pa.

Ask Grocers for our Patent Barley **CRYSTALS,** a **net, unrivalled Cereal Food,** for Breakfast Tea & Dessert. If not sold there, write us for free samples. **GLUTEN FLOUR** and **SPECIAL DIABETIC FOOD** are invaluable waste-repairing flours for **Dyspepsia, Diabetes, Debility & Children's Food.** No bran; mainly free from starch. For all family uses nothing equals our **HEALTH FLOUR.** Send for circular offering 4 lbs. free.
FARWELL & RHINES, Props., Watertown, N.Y

KEITH'S

CON. TINC. AVENA SATIVA

(FROM COMMON OATS.)

WITHOUT ADMIXTURE OF ANY KIND.

A Powerful Nerve Stimulant, Tonic, Etc.

WAS FIRST offered to the medical profession by B. KEITH & Co., in 1881, as a remedy to be employed in the treatment of

Paralysis, Epilepsy, St. Vitus' Dance, the Morphia or Opium Habit, Chloral and Tobacco Habits, Sleeplessness, Nervous Debility and Exhaustion, Neuralgia, Alcoholism Painful and Deficient Menstruation, Headache, Hysteria, Impotency, Convulsions and Prostration from fainting, and in the Convalescent stage of all Acute Diseases.

DOSE.—From ten to thirty drops, or more, as often as may be indicated to meet the urgency of the case. Administer in hot water when quick action is desired.

AN OVERDOSE CAUSES PAIN AT BASE OF BRAIN.

——WE MAKE ONE QUALITY ONLY.——

Price,
2 oz., 45c.; 4 oz., 75c.; 8 oz., $1.35; 16 oz., $2.50

B. KEITH & CO.,
75 William Street, N. Y.

Subscriptions $1 per year. Now is the time to subscribe.

DRAKE'S MAGAZINE

The cheapest, the brightest and the most entertaining illustrated monthly in the world.

A MAGAZINE FOR THE FAMILY

in the broadest and clearest sense of the word.

Its stories, sketches and descriptive articles are contributed by the most popular writers in this country, and are designed to meet the wants in every walk of life.

No other magazine published gives so much and such varied reading matter at anything approximating the price of this popular monthly.

Its humorous department, under the name of QUACKS, is celebrated the world over for its bright sayings, and is alone worth the price of the magazine.

COMMENTS OF THE PRESS.

Under vigorous and intelligent management DRAKE'S MAGAZINE is making long strides toward fame and fortune as an illustrated monthly, published at the exceedingly low price of $1.00 a year. There is nothing else cheap about it. —*New York Sun.*

DRAKE'S MAGAZINE is exceptionally bright and readable. —*Columbus Dispatch.*

The most popular dollar monthly published.—*Dickson (Dak.) Press.*

The cheapest and best ten-cent publication ever placed before the public. —*Danbury News.*

Everybody should read DRAKE'S MAGAZINE and see for themselves how much good and valuable reading it contains. —*Hotel Mail.*

Good illustrations adorn the pages, and stories, poems and other articles of unusual merit are numerous. —*Washington Republican.*

The well known humorous department termed QUACKS, is loaded at both ends with funny stories, sketches, paragraphs and illustrations. —*Cooley's Weekly.*

DRAKE'S MAGAZINE

IS SOLD AT THE POPULAR PRICE OF 10 CENTS A COPY OR $1.00 A YEAR.

SAMPLE COPIES will be sent to those who contemplate subscribing on receipt of 2 cents to cover postage.

DRAKE'S MAGAZINE, NEW YORK

CALIFORNIA
Fine Table Wines
From our Celebrated Orleans Vineyard.
Arpad Haraszthy & Co.
Producers of the
ECLIPSE
CHAMPAGNE,
530 Washington St.
SAN FRANCISCO.
PARK & TILFORD. New York, C. JEVNE & CO., - - Chicago, } Agents.



FACIAL BLEMISHES.
the Largest Establishment in the World for their Treatment. Facial Development, Hair and Scalp, Superfluous Hair, Birth Marks, Moles, Warts, Moth, Freckles, Wrinkles, Red Nose, Acne, Pimples, Blk Heads, Scars, Pitting, etc., and their treatment. Send 10c. for book of 50 pages, 4th edition.
Dr. JOHN H. WOODBURY,
37 North Pearl St., Albany, N. Y.
Established 1870. Inventor of Facial Appliances, Springs, etc. Six Parlors.



BLAIR'S PILLS
Great English Remedy for Gout, Rheumatism and Kidney Complaints.
Sure, Prompt and Effective. Oval box 34, round box 14 pills.
At all druggists, and 224 William St., New York.

HORTON, CATO & CO.'S



"ROYAL" SALAD DRESSING.
The best prepared Dressing, always fresh, does not turn oily, rancid or decompose as other dressings of a similar nature.

"ROYAL" WORCESTERSHIRE SAUCE,
The Peer of American Product.

HORTON, CATO & CO.,
SOLE PROPRIETORS AND MANUFACTURERS,
DETROIT, MICH.

GOOD AGENTS wanted to solicit subscriptions for the AMERICAN ANALYST. Apply 19 Park Place, N. Y.

All Postmasters will receive subscriptions for the AMERICAN ANALYST.

MALTED MILK
THE ONLY FOOD
For Infants and Invalids
THAT CONTAINS ALL THE ELEMENTS OF NUTRITION, WITHOUT A SINGLE ADDITION.

MALTED MILK does not have to be cooked.
MALTED MILK needs no addition of milk, only to be stirred up with water, which can be done without the slightest fuss or trouble.
MALTED MILK will not spoil in hot weather.
MALTED MILK is always ready for immediate use night or day, when traveling or at home.
MALTED MILK does away with the danger of using sour or impure milk.
MALTED MILK is free from starch and cane sugar. All foods that have to be cooked contain starch.
Ask your physician his opinion of MALTED MILK, he knows all about it.

Price, . . . 50 Cts. | Large Size, . $1.00
Extra Large Glass Jars for hospital and family use, ... $3.75
These contain five times the quantity of the $1.00 bottles.

A sample bottle will be sent free to any Mother or Invalid sending their address to

MALTED MILK CO.
RACINE, WISCONSIN, U. S. A.

ON THE USE OF PURGATIVES.

BY CHARLES A. HOFF, M. D., ST. LOUIS, MO.

Of all preparations contained within the *pharnacopœia,* there are none, apparently, held in higher esteem by mankind than that class of medicines, commonly known as purgatives. The busy practitioner confidently prescribes them with variable frequency, singly and combined, from the date of the writing of his very first prescription to that of his last; and the corner druggist rarely sees a day pass over his head on which he does not greet the customer who has called around to get "something to act upon his bowels." Indeed, the inevitable purgative awaits the tiny baby screaming in its first attack of colic; it is resorted to by the invalid weighted down with years of suffering and disease; and it is by no means despised by the individual in robust health, when assailed by the various petty ills, which even the most vigorous seldom entirely escape.

Notwithstanding the fact that purgatives are so generally prescribed by the physician, and so frequently resorted to without advice by the patient, they are not altogether incapable of doing harm. As everybody knows, the habit of purging the system repeatedly with salines, cholagogues, hydragogues, or drastics, is a most pernicious one; and the physician who fails to exercise a proper care, both in the selection and the administration of cathartics will sooner or later bankrupt the health of his patients as well as his own hard earned reputation.

Constipation is a complication of so many disorders, a symptom of so many diseases that its treatment in different cases depends upon very different considerations. For a simple, ordinary attack, the average doctor has been accustomed to use a simple purge, such as castor oil, sulphate of magnesia, rhubarb, senna, aloes, colocynth, blue pills, etc.; yet in none of these, can it be truly said, has there been found all that could be wished for, even in so simple a matter as a laxative. Where can we find the physician who has not been vexed and annoyed at the complaints of his patients against the purgative medicines he has been accustomed to prescribe. Some people there are who can not or will not swallow pills; many object to the nauseating castor oil; not a few oppose the use of salines since they are disagreeable both in taste and effect; many look upon all resinous cathartics as objectionable on account of their so called heating properties; aloes is objected to in pills and especially in pregnancy; elaterium is said to be excessively harsh and severe, croton oil is known to be dangerous; podophyllin causes an undue amount of griping; blue mass is avoided on general principles; and so on to the end of the chapter.

Fortunately, however, the physician of the present need no longer be placed in a dilemma when called upon to prescribe a preparation free from the faults enumerated in connection with ordinary purgatives. The pharmacist has bravely come to his aid with a formula of incomparable excellence; and this preparation, a combination of "manna, purified cathartic acid and fruit juice," although but recently brought to the notice of the medical world, is, nevertheless, already regarded as a most valuable addition to the resources of medicine.

The happy thought that suggested the combination known as the Rio Chemical Co.'s Acid Mannate justly challenges unlimited admiration and esteem, and has thus far evoked from the profession an almost universal verdict of commendation and praise. Prompt, mild and certain in its action, Acid Mannate may well be considered an ideal remedy in the constipation of pregnancy. Being pleasant to the taste, and continuing its good work without increased dosage, it is pre-eminently adapted to cases of habitual constipation. Indeed, in its wide range of adaptability as an aperient medicine it is impossible to exaggerate its importance, or allude either directly or indirectly to the vast variety of its beneficial, therapeutical properties.

The importance of laxatives is probably nowhere appreciated so much as in the constipation of pregnancy; and it is to this fact, no doubt, more than to any other, that Acid Mannate owes its great popularity and fame among remedial agents. The testimony of thousands of honorable medical gentlemen leading us to believe that, through the beneficent effect of this same elegant formula, constipation need not hereafter, as in the past, be regarded as one of the most troublesome attendants upon gestation. Moreover, the atrocious female pill of unknown composition but of dire effect, which has deluged the drug market for ages, we may consider as having had its day; and it is to be hoped that, since the physician is now in possession of a purgative especially suited to the period of gestation, female life will be less frequently harassed by the ails and aches said to be peculiar to the sex; and that miscarriages, displacements, granular erosions, congestions, headaches, dyspeptic and hypochondriacal attacks, and the whole long train of aches, pains and nervous ills will grow less familiar to the medical profession in the same ratio that the physician increases his familiarity with the actions of Acid Mannate.

A full sized bottle of Acid Mannate will be sent free to any Physician who desires to test it, if he will pay the express charges and mention this Journal, on application to the

RIO CHEMICAL CO.,
St. Louis, Mo

J. HENRY HENTZ. J. P. ROBINETT. J. HENRY HENTZ, Jr.

ESTABLISHED 1793.

WHITE, HENTZ & CO.,

SOLE PROPRIETORS OF

Trimble and Pennsylvania Monogram Whiskies.

222 and 224 NORTH SECOND ST., PHILADELPHIA.

D. LIEBER, 17 South William St., New York. Col. H. A. SELIGSON, 1200 Pennsylvania Ave., Washington, D. C.

NATRONA BI-CARBONATE OF SODA.

(ABSOLUTELY PURE.)

NATRONA



SODA

The nature of the raw material from which NATRONA BI-CARBONATE OF SODA is made—viz., kryolith, a mineral containing *pure sodium*—insures a purity and uniformity of product which cannot be obtained from any other known material. In making BI-CARB. SODA from any other raw material, the use of sulphuric acid is a necessity, but none is used in any part of the process of making NATRONA BI-CARB.; hence its entire freedom from the slightest trace of arsenic, which is always present in ordinary soda. Its absolute purity and entire freedom from all traces of *sulphate of soda*, common salt and other impurities, render NATRONA BI-CARB. NEARLY TASTELESS, and being bolted through the finest bolting-cloth, insures the finest stage of division.

To these indisputable facts the attention of CONSUMERS of soda is specially called. They are IMPORTANT, and should influence both those who use and those who sell soda, to buy and sell NONE BUT THE BEST.

The NATRONA BI-CARB. Soda is kept in stock by almost every wholesale druggist and grocer throughout the United States, of whom it may be ordered.

Natrona Bi-Carb. Soda is unequaled by any other brand of English or American Manufacture.

PENNA. SALT MANUFACTURING CO.,

NATRONA CHEMICAL WORKS. PHILADELPHIA, PA.

ALTHENE SKIN SOAP

An absolutely pure and perfect soap for all purposes of the toilet, nursery, bath or sick-room. Has the approval of leading chemists and physicians, and is recommended by all who have used it. Price 25 cts. a cake, or 65 cts. for a box of three. Can be obtained of the retail druggists or from

J. W. CAMPION & CO., 916 Filbert Street,

PHILADELPHIA.

GOLD You can live at home and make more money at work for us than at anything else in the world. Either sex; all ages. Costly outfit FREE. Terms FREE. Address, TRUE & Co., Augusta, Maine.

TO ADVERTISERS!

FOR a check for $20 we will print a ten-line advertisement in One Million issues of leading American Newspapers and complete the work within ten days. This is at the rate of only one-fifth of a cent a line, for 1,000 Circulation! The advertisement will appear in but a single issue of any paper, and consequently will be placed before One Million different newspaper purchasers; or FIVE MILLION READERS, if it is true, as is sometimes stated, that every newspaper is looked at by five persons on an average. Ten lines will accommodate about 75 words. Address with copy of Adv. and check, or send 30 cents for Book of 256 pages.
GEO. P. ROWELL & CO., 10 SPRUCE ST., NEW YORK.

We have just issued a new edition of our Book called "Newspaper Advertising." It has 256 pages, and among its contents may be named the following Lists and Catalogues of Newspapers:—
DAILY NEWSPAPERS IN NEW YORK CITY, with their Advertising Rates.
DAILY NEWSPAPERS IN CITIES HAVING more than 150,000 population, omitting all but the best.
DAILY NEWSPAPERS IN CITIES HAVING more than 20,000 population, omitting all but the best.
A SMALL LIST OF NEWSPAPERS IN which to advertise every section of the country: being a choice selection made up with great care, guided by long experience.
ONE NEWSPAPER IN A STATE. The best one for an advertiser to use if he will use but one.
BARGAINS IN ADVERTISING IN DAILY Newspapers in many principal cities and towns, a List which offers peculiar inducements to some advertisers.
LARGEST CIRCULATIONS. A complete list of all American papers issuing regularly more than 25,000 copies.
THE BEST LIST OF LOCAL NEWSPAPERS, covering every town of over 5,000 population and every important county seat.
SELECT LIST OF LOCAL NEWSPAPERS, in which advertisements are inserted at half price.
5,472 VILLAGE NEWSPAPERS, in which advertisements are inserted for $42.15 a line and appear in the whole lot—one half of all the American Weeklies



Book sent to any address for THIRTY CENTS.

THE FINEST MADE
COLBURN'S
PHILADELPHIA
MUSTARD
KING OF CONDIMENTS

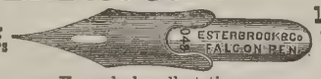
OPIUM AND LIQUOR HABIT CURED.

WE solicit an investigation of our system and methods, and will gladly send to any one very interesting matter on the OPIUM HABIT DRUNKENNESS and their effects and cure. Physicians specially invited to examine, and if desirous of trying our remedies, liberal arrangements will be made with them.

THE LESLIE E. KEELEY CO., Dwight, Illinois.

ESTERBROOK'S STEEL PENS

Leading Numbers



14,048,128
130, 135,
333, 161.

For sale by all stationers.

THE ESTERBROOK STEEL PEN CO., 26 John St., N. Y.
WORKS: CAMDEN, N. J.



These Goods are "Par Excellence,"

Pure, Healthful and Reliable, warranted to give satisfaction in every particular.

For sale by wholesale and retail grocers throughout the United States. VOUWIE BROS., Manufacturers, CLEVELAND and CHICAGO.

A BUSINESS BENEFIT.

ADVANTAGES TO ADVERTISERS OFFERED BY THE AMERICAN ANALYST.

It has not the limitations of a daily paper. No one reads yesterday's paper. A monthly lives at least a month, while a semi-monthly is fresh twice a month, and its audience is not limited by geographical lines, but the circulation is all over the United States and Canada.

It contains matters of interest to everyone, especially the ladies of the household, and is, therefore, sure of a careful perusal. Our audiences are intelligent and of the better classes, who have money to spend, and any well worded advertisement in our columns, giving real information, will receive a careful perusal.

Our rates are as low as our circulation afford. Large circulation and original matter cost money, and those advertisers who desire to realize these benefits must expect to pay reasonably for them.

Advertisements in our columns are permanent. Most of our subscribers bind their numbers.

Our advertisements are set up in an attractive form, sure to call the attention of the reader.

Anything that our readers want, or for which a demand is to be created, not wholly of a local nature, will pay to advertise with us.

We take only advertisements from legitimate houses of really meritorious goods, and give them all the editorial assistance they deserve; consequently our readers knowing this, have confidence in advertisements contained in our columns.

The fact that we have the best and largest houses in every branch of trade advertising with us, and that they always renew as their seasons arrive, proves beyond a doubt that they have found the AMERICAN ANALYST a good advertising medium. Why should not you?

PEACOCK'S BROMIDES

(SYR: BROM: COMP: PEACOCK)

NERVE SEDATIVE.

Each fluid drachm represents 15 grains of the Combined C. P. Bromides of Potassium, Sodium, Calcium, Ammonium and Lithium.

USES:—EPILEPSY, and all CONGESTIVE, CONVULSIVE, and REFLEX NEUROSES.

This preparation has stood the test of time and experience, and can be relied upon to produce results, which can not be obtained from the use of commercial bromide substitutes.

DOSE:—One to two FLUID drachms, in WATER, three or more times a day.

PEACOCK CHEMICAL CO., St. Louis.

CARL L. JENSEN'S

CRYSTAL PEPSIN TABLETS



FOR DYSPEPSIA OR INDIGESTION.

CARL L. JENSEN'S CRYSTAL PEPSIN has been known throughout the world for the last ten years among the medical profession only. But a medical preparation of such high value as this could not be kept exclusively within the power of the physicians without permitting the public to become familiar with CARL L. JENSEN'S CRYSTAL PEPSIN, which they have so often seen mentioned in prescriptions from their physicians, and from which preparations they have received such gratifying results. That the public have availed themselves of this knowledge is manifested from the fact that the demand at the drug stores of late for CARL L. JENSEN'S CRYSTAL PEPSIN has become so urgent that we have been repeatedly requested by the Druggists at large to put up the PEPSIN in a more convenient form for their customers who demand JENSEN'S CRYSTAL PEPSIN without bringing a prescription. This PEPSIN, to suit the prescription department, is put up in loose Crystals or Scales, and therefore not in a suitable manner to be handled by the public. It is therefore, for the convenience of the public, prepared in tablet form, of which one or two constitute a dose, and put up in small bottles of convenient form to be carried in the pocket, each bottle containing seventy-five tablets.

CARL L. JENSEN,

SOLE MANUFACTURER,

2039 Green Street, Philadelphia, and 161 West 23d Street, New York.

KEPT BY ALL DRUGGISTS.

ESTABLISHED 1841.



THE GREAT AMERICAN STORY PAPER,

—THE—

---YANKEE BLADE---



FREE TO SUBSCRIBERS.

This wonderful family story paper is read every week by 400,000 people. It is a large, eight-page paper, every page filled solid full of interesting reading; stories of thrilling interest, adventure, love, the sea, detective tales, fireside stories, etc. Special articles on the Household Department, Ladies' Work, Boys' and Girls' Departments. The Famous Funny Columns of THE YANKEE BLADE are edited by SAM WALTER FOSS, the celebrated humorist. The circulation is rapidly increasing. Endorsed by the best people as suitable for everybody to read. Its reading matter is pure, and devoid of the slightest tinge of vulgarity. Don't fail to try THE YANKEE BLADE. You will be delighted with it. Comes every week. Our regular subscription price is $2.00 per year. **We offer it to new subscribers for only $1.00 a year, or 50 cents for six months.** We will send it three months for 25 cents. **If you will enclose 6 cts. extra, and mention this paper, we will send you FREE a Half Dozen Japanese Shifu Handkerchiefs** of Mikado paper, fibre silk, nearly half a yard square, in handsome designs, assorted. This is one of the greatest offers ever made by any reliable firm. Send at once. **Sent 2 years for $1.75.** THE YANKEE BLADE is for sale at all newsdealers, for 5c. per copy.



POTTER & POTTER, Pubs. Yankee Blade, Boston, Mass.

We have examined the above-named paper and Japanese handkerchiefs, and find them to be a remarkable bargain. We can recommend them to all our readers.—Editor.

FOR THE ILL-EFFECTS

— OF —

Summer Heat, Heat Exhaustion

Where after a prolonged exposure to a heate atmosphere you feel exhausted, depressed an tired mentally as well as physically, take dessert spoonful of Bromo-Soda in half a glas of water, and drink while effervescing, whe relief will be sure to follow.



A Cure for Sick Headache Sleeplessness, Etc.

ASK FOR BROMO-SODA and TAKE NO SUBSTITUTE

SWIFT'S

Choice Chicago Dressed Beef

—AND—

MUTTON.

CAN be found at all times in full supply and at popular prices at the branch houses in all the larger cities and is ***retailed by all first class butchers.***

The trade of all marketmen and meat dealers is solicited for our Wholesale Branch Houses, and the ***public may rest assured*** *that in* ***purchasing our meat*** *from dealers they will* ***always receive the best.***

SWIFT AND COMPANY,

UNION STOCK YARDS,

CHICAGO, ILLS.

Tabasco Pepper Sauce

OR LIQUID PEPPER.

Is simply the Pulp of the Ripe Pepper Extracted by Pressure.

The seed of this Pepper was obtained from Central America, and by careful cultivation in Louisiana for many years has been so improved in strength, flavor and aroma, as to have become a new variety of Red Pepper, superior to all others. The pulp is so handled as to retain all the flavor, strength, aroma and color of the ripe fruit, and to keep unimpaired in any climate. It excites the appetite, promotes digestion, and is pronounced, by connoisseurs, to be the finest condiment in the world. For medicinal purposes it recommends itself by its purity, strength and diffusible form.

Manufactured by E. McILHENNY,

NEW IBERIA, LA.

For Sale by all Wholesale Grocers.

CARNRICK'S SOLUBLE FOOD

IS UNLIKE ANY OTHER INFANT'S FOOD THAT HAS EVER BEEN PRODUCED.

℞

THE FORMULA.

Partially Predigested Milk Solids,	**45 parts.**
Wheat with the Starch converted into Dextrin,	**45 "**
Milk Sugar,	**10 "**

We do not claim this food to be "a **perfect** substitute for human milk." But we do claim that **Carnrick's Food approaches nearer to human milk in constituents and digestibility than any other food that has ever been produced**, and that it is the only infant's food that will, without the addition of cow's milk, thoroughly nurse a child from its birth.

We believe that **Carnrick's Food** solves the problem of a reliable substitute for human milk. The Caseine of cows' milk, by partial predigestion with freshly made Pancreatine, is rendered as easily digestible by the infant as human milk.

We have never published an analysis of **Carnrick's Food** "prepared with milk," for, unlike all other foods, it is prepared by the addition of water only, and we base our claim upon the intrinsic value of the food as compared with an equal amount of solid constituents of human milk. All other analyses or comparisons are misleading. We challenge similar comparisons with any other food, and confidently believe, that if **Carnrick's Food** is depended upon for the nutrition of infants, the great mortality among children will be reduced. Full information regarding the process of manufacture will be cheerfully furnished, and samples sent free to those who wish to test **Carnrick's Food.**

REED & CARNRICK, New York.

GORDON & DILWORTH

MANUFACTURING PURVEYORS

Established 1847

ALIMENTARY PRODUCTS

ALL OF OUR PRODUCTIONS BEAR THIS TRADE MARK

WE WILL PROSECUTE ALL INFRINGEMENTS & IMITATIONS







CHOICE DESSERTS

OVER 100 DOMESTIC FOREIGN FRUITS AND VEGETABLES TRANSMUTED INTO TABLE DELICACIES

PRICES ON PRESERVED FRUITS REDUCED 1ST DEC. 1885

PRESERVED, CANNED & BRANDY FRUITS, FRUIT-JELLIES, VEGETABLES, TOMATO-CATSUP, SYRUPS & JAMS, SALAD DRESSING, BLACKBERRY BRANDY, MINCE MEAT, PLUM PUDDING, SWEET PICKLES, OLIVES & CAPERS, WINE-JELLIES, MARMALADE, SOUPS, SAUCES &c.

SOLD BY THE LEADING GROCERS ON THE AMERICAN CONTINENT.

GRAND NATIONAL PRIZE OF 16,600 FRANCS.

QUINA-LAROCHE

VINOUS ELIXIR,

A STIMULATING RESTORATIVE

AND

ANTI-FEBRILE TONIC.

This meritorious ELIXIR, QUINA-LAROCHE, is prepared from the **three** Cinchonas; it is an agreeable and doubtless highly efficacious remedy.—*The Lancet.*

QUINA-LAROCHE, under the form of a vinous Elixir, contains the totality of the numerous principles of the **three** Cinchona barks. It is a preparation which renders great services to Therapeutics.—Extract of the *Gazette des Hôpitaux*, Paris.

Far superior to all Ordinary Cinchona Wines.

LAROCHE'S QUINA, tried by the Academy of Medicine of Paris, is a specially prepared Compound Extract of Quinquina, a careful analysis, confirmed by experience, has shown that most of the wines and syrups hitherto used have not contained all the properties of this precious bark, of these some, although beneficial, are altogether lost, while many preparations contain but half the properties of the bark in varying proportions.

Mr. Laroche, by his peculiar method, has succeeded in extracting all the active principles of the quinquina, combining these with *Catalan Wine*, forming an Elixir free from the disagreeable bitterness of other similar preparations. Practitioners have found triple advantages in the use of this Elixir; it is a *strong tonic*, is easily administered, and perfectly harmless, being free from the unpleasant effects of Quinine.

THE FERRUGINOUS QUINA-LAROCHE is the invigorating tonic *par excellence*, having the advantage of being easily assimilated by the gastric juice, without, in any way, deranging the action of the digestive organs, proving itself to be a most efficacious remedy in cases of impoverishment of the blood, **Anæmia, Chlorosis, Intestinal Hemorrhage, Castralgia, Exhaustion,** etc., etc.

PARIS.—22 RUE DROUOT.—PARIS.

J. Laroche

E. FOUGERA & CO., New York, Sole Agents for the United States.

ARMOUR & CO.

CHICAGO, ILLS.

PACKERS OF

Pork and Beef Products

CANNED MEATS,

ETC.,

FOR HOME CONSUMPTION AND FOR EXPORT

TO ALL PARTS OF THE WORLD.

Also,

SHIPPERS OF

Choice Dressed Beef,

MUTTON AND HOGS,

In Refrigerator Cars,

To BOSTON,
NEW YORK,
PHILADELPHIA,
BALTIMORE,

And other cities throughout the country.

GREENWAY'S PORTER

—AND—

DOUBLE AND EXTRA DOUBLE STOUT.

GREENWAY'S ALE.
INDIA PALE
IN GLASS OR WOOD
AMERICAN
TRADE MARK.
FULLY EQUAL TO THE BEST IMPORTED.
FOR FAMILY OR CLUB USE.
RECOMMENDED BY OUR BEST PHYSICIANS.
FOR SALE BY ALL FIRST CLASS GROCERS AND DEALERS.
SEND FOR CIRCULARS.
THE GREENWAY BREWING CO.
SYRACUSE, N.Y.

Greenway Bottling Co.,

BOTTLERS OF

GREENWAY BREWING CO'S BRANDS OF ALE, PORTER, DOUBLE STOUT

—AND—

Germania Brewing Co's Standard Pale Crown Lager & Culmbacher.

N. Y. Depot, 31 Broadway.

ESTABLISHED IN LONDON 1831.



W. G. DEAN & SON,

—MANUFACTURERS OF—

PASTE AND STICK

LICORICE

PURE CALABRIA, Equal to the Imported

Try our SICILY (brand select).

BEST IN THE MARKET.

Also LICORICE TABLETS.

361 & 363 Washington Street,

And 84, 86 & 88 North Moore St.,

W. G. DEAN,
HARRY W. DEAN. } NEW YORK

—THE—

CHRISTIAN MOERLEIN

Brewing Co.,

CINCINNATI, U. S. A.,

Brewers of the far-famed

"NATIONAL" EXPORT

(The Queen of Beers)

LAGER.

Owing to its absolute purity, beautiful pale color, fine aroma and nutritious qualities, the above beer has become the PRIME FAVORITE in all the principal hotels and clubs, and in thousands of families throughout the West and South.

Pure LAGER BEER,

"IMPERIAL" and "CULMBACHER"

Brewed & Bottled
SPECIALLY FOR
HOTELS, CLUBS
AND
PRIVATE FAMILIES
—BY—
Beadleston & Woerz
291 W. 10th St. New York.
Orders by Postal Card promptly attended to.

H. CLAUSEN & SON

BREWING CO'S

CHAMPAGNE LAGER BEER,

ROYAL EXPORT LAGER,

EAST INDIA PALE ALE,

EXTRA AMERICAN STOUT.

Bottled for Family Use and Export by

PHŒNIX BOTTLING CO.

888 and 890 Second Avenue,

Bet. 47th and 48th Streets.

NEW YORK.

Order from your Grocer, or direct from us.

FULL WEIGHT
PURE
DR. PRICE'S
CREAM
BAKING
POWDER
MOST PERFECT MADE

Its superior excellence proven in millions of homes for more than a quarter of a century. It is used by the United States Government. Endorsed by the heads of the Great Universities as the Strongest, Purest, and most Healthful. Dr. Price's Cream Baking Powder does not contain Ammonia, Lime or Alum. Sold only in cans.
PRICE BAKING POWDER CO.
NEW YORK. CHICAGO, ST. LOUIS.

STERLING



BAKING
POWDER
MADE FROM
99 50/100 PURE CREAM TARTAR.
This powder never varies. A marvel of purity, strength and wholesomeness. More economical than the ordinary kinds. SOLD ONLY IN CANS.
STERLING MANU'F'G CO.,
12 & 14 Spruce St., New York.

TO NEWSDEALERS.

The wholesale agents for the AMERICAN ANALYST are the American News Company, through whom and the various news companies dealers can obtain their supplies. This paper is returnable; hence newsdealers need not run any risk and can keep a supply on hand. Dealers in the various cities can obtain their supplies as follows:

Albany, N. Y., Albany News Company.
Baltimore, Md., Baltimore News Company.
Boston, Mass., New England News Company.
Brooklyn, L. I., Brooklyn News Company.
Brooklyn, E. D., Williamsburgh News Company.
Chicago, Ill., Western News Company.
Cincinnati, Ohio, Cincinnati News Company.
Cleveland, Ohio, Cleve'and News Company.
Clifton, Ontario, Canada, Toronto News Company.
Denver, Col., Denver News Company.
Detroit, Mich., Detroit News Company.
Kansas City, Mo., South-Western News Company.
Montreal, Canada, Montreal News Company.
New York, N. Y. { American News Company. / International News Company. / National News Company.
Newark, N. J., Newark News Company.
New Orleans, La., New Orleans News Company.
Omaha, Neb., Omaha News Company.
Philadelphia, Pa., Central News Company.
Pittsburgh, Pa., Pittsburgh News Company.
Providence, R. I., Rhode Island News Company.
San Francisco, Cal., San Francisco News Company.
St. Louis, Mo., St. Louis News Company.
St. Paul, Minn., Minnesota News Company.
Troy, New York, Northern News Company.
Toronto, Ontario, Canada, Toronto News Company.
Washington, D. C., Washington News Company.

MANUFACTURED BY THE



N. K. FAIRBANK & CO'S
FAIRY SOAP.
A PERFECTLY PURE WHITE FLOATING SOAP.
DESIGNED EXPRESSLY TO USE IN TOILET, BATH AND NURSERY.
Admirably adapted to every requirement of the Household.
DAINTY AND DELICATE FOR ALL WASHING PURPOSES
For sale by all First-class Grocers and Druggists.
N. K. FAIRBANK & CO.,
CHICAGO, ST. LOUIS, NEW YORK, OMAHA.

ESTABLISHED 1872.
GELATINE.
JAMES CHALMER'S SON'S
Transparent Gelatine.
PURITY—STRENGTH.
Best for Family Use.
Jellies, Blanc Mange, Etc.
ACKNOWLEDGED BY EVERY ONE EQUAL TO THE BEST.



RUBY ROYAL "SEC."



This wine, of a bright crimson or Ruby color, possesses exceptional merit in all the characteristics of dryness, mellowness of flavor, and delicacy of fragrance. It is the only red champagne in the market, and can be tried at the Hoffman House, Delmonico's and other first-class places.
Sold by the Leading Grocers.

AGATE IRON WARE

Is the Purest, Cleanest, Most Durable, and altogether the Best Ware for family use ever made. It will not rust or break like ordinary Enamels, and is absolutely pure and safe to use, as certified to by the most eminent chemists here and abroad.



Two thousand different styles and sizes of Agate cooking utensils, for family use, are sold by all first-class dealers throughout the world, and giving universal satisfaction.

Subscriptions $1 per year. Now is the time to subscribe.

AMERICAN ANALYST

FOR THE

FAMILY AND CONSUMER.

A SEMI-MONTHLY ADVOCATE OF PURE FOOD AND THE SUPPRESSION OF ADULTERATION.

Office, 19 Park Place.

[Entered at the Post Office at New York, as Second Class Matter.]

VOL. IV.—No. 18. NEW YORK, SEPTEMBER 15, 1888. Whole No. 90

AGRICULTURAL EXPERIMENT STATION.
SEP 17 1888
UNIVERSITY OF ILLINOIS.

CONTENTS.

Answers to Correspondents 378
Business Notes 380
Contemporaries' Opinions 378
Domestic Dietetics 379
Do Rocks Grow? 380
Editorial 378
Growth of the Electric Light—To Protect from Lightning—Disinfecting Letters.
French Dishes 377
Heating Houses 375
Meaning of Menus 377
My Adventure. Complete Story 373
Reviews of New Books 379
Science at the Tomb 379
Warming the House—*Continued* 375

MY ADVENTURE.

A CASE OF FALSE PRETENCES, WITH A HAPPY OUTCOME.

It was certainly an odd adventure, and one in which I exhibited a degree of audacity that I can scarcely credit now; but it brought me such good fortune that I have never regretted it, especially with such a reputation for dignity as I now enjoy. It is not a very long story, yet I think it will interest you. My wife says I have told it too many times, but I believe it will bear one more repetition. It was in the year 1850. I was in the employ of a large mercantile house in the city of Boston. I had begun with them six years before, fresh from a country town, and had gradually been promoted until I was confidential clerk, and had charge of the corps of book-keepers which the business demanded. I was of a reserved disposition, of studious habits, and was fast becoming a confirmed bachelor, when the events I shall narrate occurred, changing the tenor of my life.

It was the month of December. I remember the evening as distinctly as though it were just passed. The snow was several inches deep, and the sky was filled with the small white messengers. The gaslights glimmered feebly; the shop windows were obscured; travel in the street had nearly ceased, while the few who were out hurried as fast as possible to their destinations. Important business demanded my attention in New York, and I was to leave on the midnight train for that city. I had taken my supper, or, more properly speaking, a light lunch, near the store, where I was employed until ten o'clock with the accounts and papers which were necessary in the transaction of the business which called me away.

I looked at my watch, and found I had but scant time to go home and get my valise, which I had unfortunately (as I then blindly thought) forgotten to bring with me. As I left the warm store and stepped out into the wintry air, and breasted the storm, the sensation, instead of being unpleasant, was rather exhilarating. I found in a few minutes, however, that the storm was more severe than I had imagined, and my progress was very difficult. It took me much longer to get to D Street than I anticipated, so that I was in a great hurry.

I lived in a long block of houses, all just alike. I knew nothing of those who lived upon either side; for I was away early in the morning, was gone all day, and, after I got back at night, devoted myself to my pipe and books, very rarely going out again.

The storm seemed to have redoubled its fury as I went up the steps and opened the door. I was almost blown into the hall, and the door swung behind me with violence. All was dark, but I knew just where my valise was, all ready, and so I crept upstairs cautiously, to avoid further disturbance, found my room door open, and right in the corner, where I expected, my valise.

Without an instant's delay I rushed down stairs, and was soon out in the blinding sleet. I was really exhausted when I got to the station, and, to add to my trials, I was just in time to see the train slowly moving off. After a hard run I got on the last car, recovered my breath as soon as I could, put my valise into a rack, gave the conductor, with whom I was well acquainted, my ticket, and settled myself for a nap. When I awoke it was morning, and I found to my dismay that we were snow-bound, and had made but little progress on our way. There was nothing to do, however, but to make the best of it. I read awhile, smoked awhile, walked impatiently through the cars, even lent them a hand at cleaning the track, and after other devices to kill time, thought I would look over my business matters. As I took down my valise, it felt so light it attracted my attention at once, so that I involuntary looked it all over attentively. It certainly appeared right; and there were my initials, C. S. R. in the proper place. Something intuitively told me I had made a mistake, and before opening I tried to think how it happened. Although I had taken it in the dark, I recalled the stairway, the room at the end of the hall, the position of things as they had appeared in what little light there was, and the valise in the corner whence I took it. There could be no mistake, and yet this valise seemed only about half as heavy as it ought. It may appear strange that I had not noticed it before, but, in my hurry to the station I doubt if I should have noticed had it been empty.

To solve the mystery, I opened it, and the contents certainly were not mine. Perhaps some of the fellows in the house had played a trick upon me. I found some toilet articles, some apples, a book, and, at the bottom a roll which appeared to be my papers, but which proved to be a lecture in manuscript upon "Grecian Art," with the name Chester Sylvanus Richardson at the end. Who the dickens he was was a mystery, and how I came by his valise a still greater problem After more study over it, it flashed upon me that I must have gone into one of the other houses in the block. This eased my mind a little, though I still felt anxious about my papers. There was nothing I could do but exercise patience, and so I began reading the lecture. Although somewhat beyond my acquirements, I found it interesting and instructive. Toward four o'clock in the afternoon we arrived at the manufacturing town of S—, whose inhabitants were of the wide-awake, knowledge-seeking class so often found in thriving New England villages. As it was impossible to transact my business in full without my papers, and I was weary with the slow progress I had made, I formed a sudden resolution to stop over night in S—, telegraph for my valise, and go to New York some time the next day, when it arrived.

The snow about the town was fairly beaten down, considering the fierceness of the storm and the short time since it had begun to abate. After getting out of the cars I did not hurry, but leisurely passed along the platform in the rear of the other passengers. As I was about stepping off the platform to the sidewalk, to my surprise, two gentlemen, of nice appearance, seemed about to accost me; but as they were total strangers to me, I, of course, supposed myself mistaken and passed on. In a moment they were by my side, and one of them said, very politely: "Excuse me, Professor, I thought it was you, but did not feel sure until I saw your initials upon your valise. I am sorry you have had such a rough journey; but I can assure a good audience, despite the storm."

I was so dumbfounded that I could not resist his efforts as he and his friend escorted me to a carriage, placed me in it, and then entered themselves. Before I had a chance to speak, the elder gentleman said: "I trust, Professor, you will at once feel at home with us. You have many warm friends in town, though you are a stranger, personally, to us.

"Yes," broke in the other man. "I am Judge Ackerman, chairman of the lecture committee, and my friend here is Judge Lincoln, who would insist you should make your headquarters at his house."

I saw what their mistake was; but how to get myself out of the matter caused me to fall into a reverie, during which my companions politely ceased to talk to me. A few minutes thought, and I determined to perform the part so unexpectedly thrust upon me, and give the lecture as best I could. Thanking the gentlemen, and fearing the conversation might drift into channels where I could not sustain it creditably, I begged permission to remain quiet, as my journey had been very fatiguing.

We speedily arrived at a handsome residence, into which I gladly entered. I was ushered into a warm, pleasant, sitting-room, and when left alone, my conscience began to smite me. I had not long to reproach myself when I heard the sound of a woman's voice, and the Judge's wife entered and cordially bade me welcome. In conversing with her I discovered that I was a very learned and eloquent professor, and that the public was very eager to hear me. I trembled at my audacity, but I could only carry out the character I had so rashly assumed. The lady informed me that her

LACTOPEPTINE.

The most important remedial agent ever presented to the Profession for Dyspepsia, Vomiting in Pregnancy, Cholera Infantum, Constipation, and all Diseases arising from imperfect nutrition.

Lactopeptine precisely represents in composition the natural digestive juices of the Stomach, Pancreas and Salivary Glands, and will, therefore, readily dissolve all foods necessary to the recuperation of the human organism.

CAUTION

We regret that we are compelled to caution the profession in prescribing Lactopeptine, but very careful investigation has proven to us clearly the necessity of it. Substitution of cheap and worthless compounds are being made in many cases where Lactopeptine is prescribed.

Lactopeptine is always UNIFORM, and its effects are SPECIFIC, and no one has ever been able to imitate its digestive value. If you do not obtain positive results when you prescribe Lactopeptine, you can be sure that some substitution has been made, and in such cases it may be necessary for the physician to prescribe Lactopeptine in the original ounce package to insure certainty of obtaining the genuine article. We can confidently make this assertion, knowing the scrupulous uniformity in digestive value of every ounce of Lactopeptine.

Lactopeptine has always been kept strictly in the hands of the Medical Profession, never having been admitted in any publications but Medical Journals. It is prescribed by the most intelligent and educated physicians in all parts of the world, and there are but few physicians who have ever used Lactopeptine that will not agree with the late Prof. L. P. Yandell, when he says: "Lactopeptine is one of the certainties in medicine, and in this respect ranks with Quinine."

In the various forms of Dyspepsia, in vomiting in Pregnancy, and in Mal-nutrition of children, there is no known remedy so positive in results.

P. O. Box 1574. **THE NEW YORK PHARMACAL ASSOCIATION,** NEW YORK.

son, who was very intimate with me (then I shuddered) was away (here I breathed easier), but I should meet her daughter Lily. The lady left, and after a brief quiet, which seemed hours to me, I heard voices in the hall. There was evidently an intention to speak in a low tone; but nevertheless, I heard all that was said distinctly, as the door was slightly ajar.

"What is this wonderful prodigy of learning like, mamma? Is he a solemn-faced man, with sleek hair, spectacles, and erudition written on every feature? Have I drawn a correct picture, mamma?"

"Oh! no, indeed!" was the answer. "He is much unlike what Charlie's letters had led me to expect. He is really a fine-looking man, very gentlemanly, and very pleasing to converse with; but I must say I should never suppose he was such a learned man as he undoubtedly is." I began to feel doubly guilty, and had not recovered my composure when Miss Lily entered the room. She was such a vision of loveliness that my discomfiture was increased. I know I must have seemed really stupid; but my supposed wisdom doubtless encouraged her to overlook it, and the grace of her welcome completed the fascination her first appearance had created.

We were soon talking so eagerly that I forgot my embarrassment. I was delighted to find her range of reading and thought were such that we could talk very intelligently together. I pretended to be a great lover of music, and our conversation turned upon that topic, so that, when her mother came to call us to tea, we were singing together and enjoying each other's society as though we had been friends for years.

Tea was soon over, and the eventful moment was near. I overheard Miss Lily say to her mother in a whisper, "Mamma, he is splendid." This infused me with fresh courage for the ordeal. The Judge and wife, Miss Lily and I, rode together to the hall. The sight of the brilliantly-lighted room and the expectant faces of the people made my knees tremble and my heart beat quickly; but I left the Judge and his family, and made my way to the ante-room, where I found my friend the chairman. In a few moments I was on the platform, facing a hall full of intelligent-looking people, and conspicuous among them the bright eyes and charming face of Miss Lily. I do not know what it was the chairman said, I only know it was a panegyric upon me, and that when he said, "I now have the honor and the pleasure of presenting to you the celebrated lecturer and scholar, Professor Richardson," I arose and stood before them, undecided whether to speak or to turn and run.

The applause which followed gave me a little time to

MELLIN'S

TRADE MARK.

CRAFT LABORA

FOR INFANTS & INVALIDS

FOOD

The Only Perfect Substitute for Mother's Milk.

A Copy of our Book,

The Care and Feeding of Infants

will be MAILED FREE to any address.

DOLIBER, GOODALE & CO.,

40-41-42-43 Central Wharf, Boston, Mass.

STEVENSVILLE MILLS.

IMPEROYAL VACUUM COOKED OATS.

IMPEROYAL VACUUM COOKED WHEAT.

M. D. STEVENS'

SOLE MANUFACTURER OF

ABSOLUTE PURITY.



HOUSEHOLD NECESSITY.

ONE MINUTE IN PREPATATION.

IMPEROYAL VACUUM COOKED HOMINY.

IMPEROYAL GRIDDLE CAKE FLOUR.

Recommended by Eminent Physicians and Chemists.

☞ Adapted to all kinds of Pastry, Bread, Biscuit, Griddle Cakes, etc., and its absolute purity and freedom from Alum, Terra Alba or any injurious ingredient, makes it a necessity in every household. No lady can afford to be without it. Sold by best Grocers.

M. D. STEVENS,

Room 18, Mercantile Exchange,

Cor. Hudson & Harrison Sts., NEW YORK.

BAGINSKY—EARLE.

In a paper read by CHARLES WARRINGTON EARLE, M. D., at the 39th meeting of the Am. Med. Ass'n, Dr. EARLE quoted BAGINSKY, the latest German author on Kinderkrankheiten as a leading advanced man on the subject of infant feeding. We select for readers of this advertisement one brief, *pithy sentence from Baginsky*, as quoted by Dr. EARLE, as follows:

"NESTLÉ'S FOOD IS SPOKEN OF AS BEING

THE BEST TYPE OF A PREPARED FOOD."

Testimony of this kind crops up every month in the writings of leading men all over the world. We must caution the profession against imitations of NESTLÉ'S FOOD, under the name of milk food. Samples sent on application to

THOS. LEEMING & CO., NEW YORK

DO YOU WANT GOOD TEETH?

THEN USE THE



Restores the ***Natural Lustre*** of the ***Enamel.*** ***Absorbs*** and ***Removes Tartar*** and ***Stains*** from the teeth. Has no Loose Bristles. Does not hurt the gums.

A NOTED DENTIST.

Dr. Arthur Holbrook, of Milwaukee, Wis., writes: "The Ideal Felt Tooth Polisher is all that its name indicates. I intend to recommend it."

Its Economy: First cost, 60 cents, for holder and box of 18 Felt Polishers; latter only need be renewed, 25 cents per box; holder imperishable; at all druggists or mailed by

HORSEY M'F'G CO., Utica, N. Y.

IMPORTANT

TO THE

MEDICAL PROFESSION.

Send your address to THE NEW YORK PHARMACEUTICAL COMPANY, BEDFORD SPRINGS, MASS., for Illustrative Hand-book, **FREE,** containing valuable formula, special directions, and the testimonials of one thousand physicians in favor of the great merits of

HAYDEN'S

Viburnum Compound,

IN FEMALE DISEASES.

Also, the

URIC SOLVENT,

For KIDNEY DISEASES, and complaints arising therefrom.

brace up. So, spreading the manuscript upon the desk, I began. I had devoted a little time to elocution, and had looked over the manuscript in the cars, so that I was fairly familiar with it, and, as I proceeded, I kept gaining additional courage, and the lecture was delivered in a way that astonished myself and won repeated plaudits. A vote of thanks to me was unanimously passed, the audience dispersed, and I was soon seated in the Judge's pleasant parlor, where he poured out a stream of congratulatory remarks. Miss Lily was silent, but I thought her looks indorsed her father's speech. I was much tired by my exertions, and gladly availed myself of that excuse to retire.

Alone in my room, the possible consequences of my evening's performance troubled me. I was deeply impressed by Miss Lily's beauty, culture and bewitching manners, but how could I continue the acquaintance? I could not long continue the character of professor, and an attempt to explain might complicate matters worse. The only way to do was to leave without explaining, and to contrive some way in future to atone for my folly. So, after breakfast, I took a long walk, during which I considered matters, and at last stepped into a telegraph office to send for my valise, which had almost escaped my recollection. While standing in the office, preparing my message, a man came in and began chatting with the operator. Just then the instrument began to click. The operator read the message, and gave a cry of surprise.

"Look here, Bill, to the other man; "didn't Professor Richardson lecture here last night?"

Oh! What should I do if recognized as the impostor!

"I don't know," was the answer. "I heard he did, though."

"Well, here is a message to the Judge from him, which says he couldn't come, 'count of the storm. Something funny somewhere. I'd better get this up to him as soon as possible."

So off he started to find a boy to carry the message. Whatever I did must be done quickly. I found that a train left in twenty minutes. I rushed back to the Judge's house, got in without being seen, grabbed a valise, and was soon on my journey to New York, from whence I telegraphed for my valise. My heart smote me for treating my hospitable host so; but I felt the worst at not being able to bid adieu to Miss Lily. As soon as I arrived at my hotel I sent the following note to the Judge:

DEAR SIR: Unexpected circumstances forced me into assuming the character of one far more wise, but, I trust, not more deserving, than myself. I shall renew our acquaintance *in propria persona* in a way that I hope will entitle me to your confidence, and excuse the deception I have practiced. With much esteem and respect. Yours,

CALEB S. ROCHESTER.

I heard afterwards what excitement followed the delivery of the telegram and the discovery of my absence. The Judge and his wife were furious, but Miss Lily was confident it would come out all right. Somehow, when my note was received, it tended somewhat toward softening the Judge's anger; but it was a mystery for some time to them all. The professor made a trip to the place to investigate the matter, and was invited to lecture. I am vain enough to be pleased with the fact that the people declared the false professor was the more eloquent of the two. Later, I called upon the professor and told him the whole story. He laughed heartily at my adventure, and proved to be a whole-souled man. Our acquaintance ripened fast, and it was not long before I was in S—— again with a cordial endorsement from him. Miss Lily answered my ring herself, and the look of astonishment upon her countenance I shall never forget. The reading of the Professor's letter made everything satisfactory. The Judge laughed long and loud as I told him how I felt upon my former visit. I called again and very often, and one night there was a wedding in the pleasant little parlor, at which Miss Lily became Mrs. Rochester. The Judge declares that our boys have Grecian countenances, and he calls one Phidias and the other Praxiteles, although their real names are George and Rufus.—*Independent.*

WARMING THE HOUSE.

SOME SCIENTIFIC, ECONOMIC AND PRACTICAL SUGGESTIONS.

(*Continued.*)

The direct warming of the air may be effected by stoves with brick or iron flues, or by hot water or steam pipes. The sizes of the heating surfaces for this object must be proportioned to the volume of air required to be warmed for ventilation and the degree of heat to be maintained, the thickness of the material, and its capacity for absorbing and radiating heat, and for transferring heat from one surface to the other. When a large volume of air is supplied and removed for ventilation, rapidity in transferring the heat from the fuel to the air is an important consideration. Brick stoves and flues are worse conductors of heat than iron stoves or flues, but the surface of a brick stove parts with the heat which reaches it somewhat more rapidly than do the surfaces of an iron flue. The slow conducting power of the material, and the greater thickness of a brick stove prevent alternations which may take place in the fire from being felt so much as with iron stoves or flues, and therefore the brick stove warms the air more equally, without sudden variations; the air so warmed is free from objectionable elements, and where they can conveniently

The Standard of Excellence.

KINGSFORD'S

OSWEGO

Pure and Silver Gloss



STARCH

KINGSFORD'S

OSWEGO CORN STARCH

FOR

Puddings, Custards, Blanc-Mange, Etc.

THE PERFECTION OF QUALITY.

WILL PLEASE YOU EVERY TIME.

Always ask your Grocer for these goods.

COLDEN'S LIQUID BEEF TONIC.

ORIGINAL LABEL:
"Colden's Liebig's Liquid Extract of Beef and Tonic Invigorator."

AN INVALUABLE AID IN THE TREATMENT OF ALL CASES OF DEBILITY.

Established 15 Years. Endorsed by Scores of Physicians. Essentially Different from all other Beef Tonics. Beware of Imitations.

COLDEN'S LIQUID BEEF TONIC consists of the Extract of Beef (by Baron Liebig's process), spirit rendered non-injurious to the most delicate stomach by extraction of Fusel Oil, soluble Citrate of Iron, Cinchona, Gentian and simple aromatics. An official analysis of this preparation by the eminent chemist ARTHUR HILL HASSALL, M. D., F. R. S., and an endorsement by SIR ERASMUS WILSON, F. R. S., is printed on the label of each bottle.

Its Range of Action Embraces all Cases of Debility.

By the urgent request of several eminent members of the medical profession, I have added to each wineglassful of this preparation two grains of SOLUBLE CITRATE OF IRON, and which is designated on the label as "No. 1," while the same preparation, without Iron, is designated on the label as "No 2."

It acts directly on the sentient gastric nerves, stimulating the follicles to secretion and gives to weakened individuals that first pre-requisite to an improvement, an appetite.

☞ *I will, upon application, send a sample bottle of Colden's Liquid Beef Tonic to any physician in regular standing. Please ask your Dispensing Druggist (if he has not already a supply) to order it. In prescribing this preparation physicians should be particular to mention "COLDEN'S" viz: "EXT. CARNIS. FL. COMP. (COLDEN). It is put up in pint bottles and can be had of Wholesale and Retail Druggists generally throughout the United States.*

C. N. CRITTENTON, Sole Agent,

115 Fulton Street, N. Y.

Please Mention the AMERICAN ANALYST.

be applied, it is advisable to use brick stoves for warming air for ventilating purposes.

With an iron flue pipe from a stove, almost the whole heat which any fuel is capable of developing may be utilized by using a sufficiently long pipe, horizontal for the greater part of its length, to convey the products of combustion to the outer air. The heat given out by a stove-pipe varies with the temperature from end to end, being of course greatest at the end next the stove, where the emission of heat is very rapid, and the amount of heat given out, but per square foot will vary at each point as the distance from the stove increases. The proportions also into which the heat divides itself between radiation and convection vary greatly with the temperature. Thus with a stove-pipe heated at the end nearest the stove to a dull red heat at 1,230 deg. Fahr., and of sufficient length to allow the heat to be diminished to 150 deg. at the further end, it would be found that at the stove end of the pipe 92 per cent. of the total heat emitted by the pipe is given out by radiation to the walls, and only 8 per cent. to the air, but at the exit end the heat is nearly equally divided, the walls receiving 55, and the air 45 per cent. Taking the whole length of such a pipe, the walls would receive 74 per cent. and the air 26 per cent. of the heat emitted. But with a flue-pipe heated to lower temperature the air might receive half the heat or even more. When, therefore the object is to heat the walls rather than the air, the temperature of the pipes should be high, and for this purpose stove-pipes are more effective than hot water or low-pressure steam-pipes. At high temperature there will be practically little difference of effect between horizontal and vertical flue-pipes, because the heat given out is principally that due to radiation, which is independent of the form and position of the radient. An adequate proportion of flue-pipes to the form and size of the stove involves a large surface for the flue-pipe, with a careful observance of proportion, as much as 94½ per cent. of the heat in the fuel has been utilized.

There are, however, several serious objections to iron stoves, especially for small rooms; a long flue pipe is unsightly, and on that account often inadmissable; iron stoves heat rapidly, and easily become red hot, and the effect produced therefore is unequal. Carbonic oxide too has been found in air warmed by iron stoves very highly heated. It is alleged that highly heated iron may take oxygen from the carbonic acid in the air in contact with its surface, and thus reduce the acid to carbonic oxide.

Whenever iron stoves or cockles are used for heating air, care should be taken to prevent the iron from attaining a high temperature, and with this object all iron stoves should have a lining of fire-brick so as to prevent the fire from coming in direct contact with the iron; such an arrangement preserve greater regularity in the heating of the air. This object may be also attained by giving the stove a large surface in proportion to the fire by means of flanges or gills to carry off the heat as fast as it is generated. Iron, coated with a surface of glazed enamel, would enable the heat to pass rapidly from the fire to the surface, while the enamel surface would emit the heat more rapidly than the iron surface.

(To be continued.)

VENEERING FRAME HOUSES.—A construction detail that is gaining much popularity in some Western cities is the bricking in of frame houses. The building is sided up with matched stuff, as if complete; then a brick face wall, four inches thick, is laid in contact with the exterior, tied on by spikes about every sixth course. A boy distributes them all around on top of the wall. They are held in the mortar bed ready, and driven through into the siding till the heads are flush with the face of the wall, when the next courses are laid, and so on. The walls present the appearance of solid masonry, are durable, and, as they add to the warmth of the buildings, seem to present substantial recommendations, especially in severe climates.

BURNETT'S
PERFECTLY PURE HIGHLY CONCENTRATED
Standard Flavoring
EXTRACTS

THE superiority of these Extracts consists in their
PERFECT PURITY AND GREAT STRENGTH.

There is no subject which should more engross attention than the purity of the preparations which are used in flavoring the various compounds prepared for the human stomach.

They are not only true to their names, but are prepared from fruits of the best quality, and so highly concentrated that a small quantity only need be used.

JOSEPH BURNETT & CO., Boston, Mass.

DO ROCKS GROW!

EXPLANATION OF A POPULAR FALLACY ON THE SUBJECT.

The belief that rocks and stones, especially the loose bowlders found in the drift, have grown and are growing in their present situation, is not uncommon among ignorant people. At certain points on the coast of Maine the fishermen are unanimous in their belief that the rocks in the harbors are growing, as they find less water over them than in former years. This is probably true in one sense, as there can be but little doubt that the land in those localities is slowly rising. The early settlers of New England, in ploughing up their land for the first time, and finding it filled with rounded rocks of every size, from the tiny pebble to the massive bowlder, and knowing nothing of the great ice age and the geological discoveries of more modern times, might well have thought that the stones had grown in *situ* by some concretionary process; but we now know that they are rather diminishing than increasing in size, and that they have all been transported from the parent ledge by the irresistible power of moving ice, in many cases for hundreds of miles. Nevertheless, it is true that many rocks actually do grow. The limestones have been formed by living organisms, like the coral polypes, and it may even be said of many limestone deposits that every particle has at some time formed a part of a living animal. Sandstones, slates, and probably some varieties of granite have all been deposited underneath large bodies of water, and in this sense have grown to their present dimensions. Only the igneous or volcanic rocks cannot strictly be said to have "grown," and those of this class which are highly crystalline may be indirectly so considered, as the formation of a crystal, either from fusion on solution, presents in many ways a wonderful resemblance to the growth of a living organism. It is, however, the decay of the rocks that is of the most importance, and with which we have most to do. The "eternal hills" are not only often "shaken," but are very far from being eternal. They are constantly decreasing in size, and being washed down into the valleys. Even the lofty Alps are considered to be but the "stubs" or remains of a much loftier range existing in past geological epochs. It is to this constant degradation and decay that the farmer owes his fertile fields, as the soil from which he raises his crops was at one time in the condition of hard and barren rock. The agencies which cause the decay of the rocks are very numerous and varied. Cold, heat, frost, rain, wind, vegetation, running streams, and standing water all do their part; and chemical decomposition is an important factor, especially with granites and other rocks containing felspar. Extremes of heat and cold cause the surface of the rock to crack, and the cracks become filled with water, which freezes and expands, breaking it up still further. Every stream of water, from the trickling raindrops to the rushing torrent, does its part in wearing away and pulverizing the rocks in its course; and the finely divided material is carried along by them, and deposited along its banks or in the sea at its mouth. In dry countries the sands of the desert, blown about by the winds, wear



ALTHEA.

The greatest hygienic face stimulant. Is the grandest preparation for the complexion ever discovered.

PRICE, $1.00 PER BOTTLE.

MANUFACTURED BY THE
ALTHEA COMPANY
25 West 125th St., N. Y.

Ask your druggist for it, or send direct to us.

"ROYAL POLISH"



The Most Reliable Dressing
FOR
Ladies' and Children's Shoes.

It is the BLACKEST.
It COATS the Leather the LEAST.
Does NOT INJURE the Finest Kid.

There is nothing AT ANY PRICE equal in quality, or so convenient and CLEANLY TO USE.

SOLD EVERYWHERE.

Ask Dealers for "BIXBY'S ROYAL POLISH."



"BIXBY'S BEST"
For GENTS' BOOTS.

Shines Quickly!
Saves Labor and
Leather!!

—TRY—
"Size 5" OR
"Size B"
WITH
Pat. Sliding Handle



THE MOST PERFFECT EVER INVENTED.
Working under the box, ready for use when wanted



away the rocks, just as, on a smaller scale, the sand-blast cuts the hard glass, and engraves beautiful designs on its surface. In that wonderful natural laboratory which exists in every growing plant there are reagents which can slowly but surely act upon the hard, stony particles in the soil, and cause their decomposition. The wheat-stalk, for instance, possesses the power of assimilating from the soil that most refractory element, silica, which the chemist can only dissolve by the aid of his most powerful reagents, and building it into its structure to give it the requisite strength. In a similar way, lime, magnesia, phosphoric acid, and potash are all derived from the soil, causing the further disintegration of the more or less fine grains of sand or rock previously existing there. The decomposition, or "weathering," of granite and other felspathic minerals is a matter of much interest. Granite is a composite rock formed of the minerals quartz, mica and felspar. Quartz is one of the hardest and most permanent of minerals, but mica, and more especially felspar, contains alkalies which are easily removed. Chemically speaking, felspar is a silicate of alumina and potash or soda. The chemical combination is so weak that, under the action of the elements, the potash or soda is rendered soluble and washed away, while the silicate of alumina remains as a fine white powder, known as kaolin or porcelain clay. The large deposits of this valuable substance in various parts of the world are supposed to have been formed in this way by the decomposition or weathering of felspar or felspathic rocks. We thus see that even in the mineral kingdom there is a constant change. The solid rocks are ground down into gravel, sand or clay of various degrees of fineness. The streams transport them to the lower levels, or spread them out over the ocean's bed. We know that in the past these deposits have been hardened and consolidated into conglomerates, sandstones, schists, shales, slates and metaphoric rocks, and raised up by the contracting earth into hills and mountains once more. Whether this process is ever to be repeated we do not know, but as long as the present natural forces are in operation we know that the mountains, hills, rocks and stones are continually decaying, and the surface of the earth tending to one general level. —*Popular Science News.*

OILING THE WAVES.—An improved method of distributing oil on the water consists of a rocket to which is attached a cylinder filled with oil. It is said that the rocket can be fired with accuracy from the ship, and that, when it explodes, the oil is scattered just where it is wanted. In one experiment the rocket was fired to a distance of 1,500 feet and less. By the explosion of five rockets at a distance of from 1,200 to 1,500 feet from the ship, a space of 1,500 to 2,000 square feet of water was covered with oil, and the waves were at once smoothed. The rocket was fired 900 feet against a gale. The importance of the invention to deep-water sailors consists in the certainty of explosion of the rocket at a sufficient distance to leave the vessel in calm water during a gale.

FRENCH DISHES.

THE MEANING OF THE TERMS FOUND ON BILLS-OF-FARE.

[Translated and Explained by the AMERICAN ANALYST.]

It is not our purpose to furnish a complete dictionary of French words used in cooking and on bills-of-fare, but only to give free translations of those terms most frequently found, the full understanding of which would possibly conduce to the readers' enjoyment of the dinner table. Incidentally, also, some practical hints are given as to the composition of many of the more popular French dishes.

Abattis d'oie	Stewed goose giblets.
Agneau	Lamb.
Aigrefin	Haddock.
Aigrefin sauce en beurre	Boiled haddock with drawn butter.
Aloyan de bœuf à l'Anglaise,	Sirloin in English style.
Aloyan rôti	Roast sirloin of beef.
Ananas	Pineapple.
Anguilles	Eels.
Anguilles à la bonne femme,	Eels in Bordelaise sauce.
" à la bourgeoise	Eel roasted with tomato sauce.
" à la Colbert	Broiled eel in butter.
" à la Hollandaise	Eel steamed with herb sauce.
" à la maréchale	Eel breaded with slices of lemon and parsley.
" à la matelotte	Boiled eel with ham, onions, herbs and Hock wine.
" à la Normande	Eel roasted with bacon and vinegar.
" à la Provençale	Eel baked in remoulade sauce.
" à la tartare	Eel in remoulade sauce.
" au soleil	Eel breaded and tomato sauce.
" cuite en bière	Eel boiled in beer.
" en bleu	Stewed eel served with slices of lemon and parsley.
Artichauts	Artichokes.
Asperges	Asparagus.
Aspic	Salt jelly.
Aubergines	Vegetable marrow.
Bastion (en)	Decorated with aspic jelly.
Bécasses	Woodcock.
Bécasses rôti	Roast woodcock.
Bécassines	Snipe.
Beignets	Fritters.
Blanquettes de chapon	Pot-roasted capon, with white sauce.
Bœuf	Roast beef.
Bœuf à la mode	(A la mode beef) pot-roasted beef.
Bœuf à la Richelieu	Roast beef, with stuffed tomatoes and mushrooms.
Bœuf bouilli	Boiled beef.
Bœuf fumée	Smoked beef.
Bœuf salé	Corned beef.
Boudins de faisan	Pheasant sausages.
Bouillon	Broth, watery extract of meat.
Bouillon de mouton	Mutton broth.
Bouillon de veau	Veal broth.
Brocoli	Broccoli, or Italian asparagus sprouts.
Caille	Quail.
Caille à la Toulouse	Stewed quail, white sauce.
Caille aux choux	Quail, with cabbage.
Caille aux gratin	Breaded quail.
Caille aux truffe	Truffled quail.
Caille en salmi	Stewed breast of quail.
Caisse de foies gras à la financière	Goose livers in paper, with truffles, mushrooms and oysters.
Canard	Duck.
Canard à la Bordelaise	Pot-roasted wild duck, with mushrooms.
Canard à la Sicilienne	Wild duck, with rice and artichokes.
Canard à la vigneron	Wild duck, stuffed with chestnuts.
Canard aux morilles	Wild duck, with turnips.
Canard aux oignons	Wild duck, with onions.
Canard aux petits pois	Wild duck, with green peas.
Canard sauvage aux choux de Bruxelles	Wild duck, with Brussels sprouts.
Carottes	Carrots.
Carottes à la flamande	Stewed carrots, with yolk of egg and cream.
Carré de porc frais rôti	Roast pork.
Carré de veau à la jardinière	Calf's ribs, with young vegetables.
Caviar	Caviar (preserved sturgeon roe)
Cerf	Deer.
Cerises	Cherries.
Chapon	Capon.
Chapon à la perigord	Capon, with truffle sauce.
Chaud	Hot.
Chaud froid de chevreuil	Cold venison stew.
Chevreuil	Venison.
Choux	Cabbage.
Choux au naturel	Boiled cabbage.
Choux étuvés	Stewed cabbage.
Choux de Bruxelles	Brussels sprouts.
Choux fleur	Cauliflower.
Choux fleur au beurre fondu	Cauliflower with butter sauce.
Choux fleur au gratin	Cauliflower breaded.
Choux fleur au Parmesan	Cauliflower with Parmesan cheese.
Coings	Quinces.
Consommé	Beef soup.
Consommé à la queue de bœuf	Ox-tail soup.
Coq de bruyère	Heath-cock.
Citron	Lemon.
Cochon de lait	Sucking pig.
Coquilles	Patties.
Cotelettes d'agneau à la jardinière	Lamb cutlets, with young vegetables.
Cotelettes d'agneau à la purée d'oseille	Lamb cutlets, with sorrel.
Coquilles aux truffes	Truffle patty.
Coquilles de champignons	Mushroom patty.
Coquilles de cervelle	Brain patty.
Coquilles d'huitres	Oyster patty.
Coquilles de macaroni	Macaroni patty.
Coquilles de ris de veau	Veal sweetbread patty.
Coquilles de saumon	Salmon patty.
Coquilles de soles	Soles patty.
Coquilles de volaille	Chicken patty.

(*To be continued.*)

THE JOKE AND GENERAL SHERIDAN.—A little anecdote is told of General Sheridan which does much to explain why he was so universally esteemed. He was sitting with a number of others one day, when an officer, high in rank, rushed in, shouting: "Oh, boys, I've such a good story to tell you! There are no ladies present, I believe?" "No, but there are gentlemen present," was the curt reply of Sheridan. The story was not told.

ARTIFICIAL SILK.—Artificial silk has been prepared by Dr. Chardonne, a French experimenter, by dissolving three grammes of nitro-cellulose in 100 to 150 cubic centimetres of a mixture of equal parts of alcohol and ether, and adding 2.5 cubic centimetres of a filtered 10 per cent. solution of ferrous chlorfde in alcohol, and 1.5 cubic centimetres of a solution of tannic acid in alcohol. The filtered liquid is placed in a vertical reservoir, having a blowpipe nozzle of glass in the bottom. This pipe forms an acute cone with an orifice from one-tenth to one-twentieth millimetre wide, the thickness of the margin not exceeding one-tenth millimetre, and opening into a vessel of water acidulated with ½ per cent. of monohydrated nitric acid. The fluid in flowing out by pressure hardens in the acidulated water, and the resulting thread is dried rapidly in hot air. The thread can be dyed all colors by soluble pigments.

American Analyst,

Published on the 1st and 15th of each month.

Subscription, - - - - - - $1 per year.
Single Copies, - - - - - - 5 cents.
Subscriptions to foreign countries, - $1.50.

Remit by Express Money Order, Draft, P. O. Order, or Registered Letter.

Advertising rates on application.

EUROPEAN AGENCIES.

On file at "American Exchange," 449 Strand, London; and American Exchange," 35 Boulevard Des Capucines, Paris.

THE ANALYST PUBLISHING CO.,
Publishers.

H. LASSING, M. D., } ***Editors.***
T. P. McELRATH, }

No. 19 Park Place, ... New York.

NEW YORK, SEPTEMBER 15, 1888.

CORRESPONDENTS AND EXCHANGES.

Please direct all business communications to

THE AMERICAN ANALYST,
19 Park Place,
New York.

ANSWERS TO CORRESPONDENTS.

HEALTH LIFT.—The cheapest and most effective home gymnasium that we can recommend both theoretically and from practical personal experience may be thus described: a flat piece of steel notched on one side, fitting tightly on a wooden frame, and, after being greased on both sides with a bacon rind, rubbed into a stick of wood laid lengthwise of a sawbuck.

ELECTRICITY.—The speed of transmission when the first electric telegraph was established was from 4 to 5 words a minute; in 1849 the average rate for newspaper messages was 17 words a minute; the present pace of the electric telegraph between London and Dublin, where the Wheatstone instrument is employed, reaches 463 words: and thus what was regarded as miraculous sixty years ago has multiplied a hundred-fold in half a century.

DELTA.—The Missouri River discharges sediment at the rate, in round numbers of 170 cubic feet per second, or 500,000 cubic yards per day, or 180,000,000 cubic yards per year. At flood-stage the discharge of sediment has been observed to be as great as 4,000,000 cubic yards per day. The latter amount is equivalent in volume to a levee 100 square yards in cross-section and 23 miles long, and the average annual output would suffice to build more than 1,000 miles of such levee. The volume poured by the Mississippi into the Gulf is about twice this output.

W. J.—The greatest degree of winter cold there is known of on the globe occurs at the town of Werchojansk, Siberia, in latitude 67° 34′ N., longitude 133° 51′ E., and at a height of about 350 feet above the sea. Monthly means of—58° F. occur even in December, a mean temperature which has been observed nowhere else in the polar regions; and minima of—76° are usual for December, January and February. In the year 1886 March also had a minimum of—77°, and during that year December and January never had a minimum above—76°, while January, 1885, the temperature of—89° was recorded. These extreme readings are hardly credible, yet the thermometers have been verified at the St. Petersburg Observatory.

GROWTH OF THE ELECTRIC LIGHT.

The National Electric Light Association held a Convention at the Brunswick Hotel, in this city, beginning August 29, and continuing through the following week. Upwards of three hundred delegates were in attendance, and the proceedings throughout were of great interest. Some appreciation of the wonderful progress that is going on in the science of electrical lighting is afforded by the figures given by the President of the Association, Mr. S. A. Duncan, of Pittsburgh, Pa., in his opening address. Discussing the present state of the industry he said: "From time to time, statistics as to the amount of electric light apparatus in use in this country have been presented to the Association. Six months ago it was estimated that there were no less than 4,000 isolated plants and central stations, operating 175,000 arc lights, and 1,750,000 incandescent lights. To these figures we may now add that there are 1,351 new isolated plants and central stations, operating 35,201 arc lights, and 392,944 incandescent lights, of which I have a detailed record. By adding this increase to the figures of six months ago, we find that there are now 5,351 isolated plants and central stations, and there are burning every night in the year, in the United States, no less than 192,500 arc lights, and 1,925,000 incandescent lights. We may also add that there are 459,495 horse-power of steam engines devoted to electric lighting. Figuring this in coal consumption, it can be demonstrated that in the year of 1888 enough of coal will be consumed in the United States, for electric lighting purposes, to make a solid column of 100 feet square and over a mile high. It may be here parenthetically remarked that there has been an increase in the capitalization of the electric light companies of the United States, in the last six months, of not less than $42,210,100. But we have not yet touched upon the great industry of the electrical distribution of power. There are, at the present time (of which we have a record), 34 electric railways completed and in operation in the United States, having an aggregate 138 miles of single track, and operating 223 motor cars, and utilizing 4,180 horse-power for stationary engines. There are, also, now in process of construction 49 other electric railways, aggregating 189 miles of single track, which will operate 244 motor cars, and at the present time there are constructed and being constructed 83 electric railroads, aggregating 327 miles of single track and operating 467 motor cars. In this connection it must be remembered that there are 39 other electric railroads incorporated which have not yet begun construction. It is also estimated that the electric cars now in operation in the United States will carry, in the year 1888, no less than 17,045,500. It can be better imagined than estimated what will be the ultimate outcome of an industry which has arrived to such a degree of development in three years. In view of the difficulty of compiling statistics on such small unities, it has been impossible to collect reliable information relative to the stationary motor business; but we know that at the present time, it has stimulated capital to such an extent, that there are single factories employing no less than 1,500 hands each in the manufacture of electric motors, and, at no distant day, all large cities will have their power stations of several thousand of horse-power each, distributing energy throughout every ramification of industry. So rapid a development of this new industry into gigantic commercial proportions should be an admonition to the electric light companies now in the field, to reap the harvest which is ripe to their sickle, and not to wait for competitors to come within their field of operation, in the shape of power stations; for these people once established, will reach out and take in a large portion of the electric lighting business."

TO PROTECT FROM LIGHTNING.

According to the *Electrical Review* the question what constitutes a safe defense against lightning seems in a fair way of settlement unless the discussion should continue to the end of all things, when Gabriel blows his horn and there is no further demand for lightning rods. Up to this point it has been shown that country houses protected in the old way are not protected at all. Indeed, Mark Twain, who thought to make a funny story out of the fact that he let a dozen lightning rod men put rods on his house "so's to get rid of them," the same attracting all the lightning in the neighborhood and himself and family compelled to fly whenever a thunderstorm arose, because of them, will probably be more disappointed than pleased to learn that his house was the only correctly protected one in the neighborhood, because it takes all the point out of his story, making it no longer funny but serious. Indeed, the book must now be taken from the department of "Fiction" and put under that of "Applied Science," for Prof. Oliver Loge in a recent lecture says that is the only proper way to protect a house. He says: "A wire netting all over the house, a good earth connection to it at several points, and a plentiful supply of that barbed wire which serves so abominably well for fences, stuck all over the roof, and you have an admirable system of defense." It is a reasonable theory and doubtless a correct one, as most men will agree who have ever seen the electricity a Wimshurst machine will discharge dissipated by one and then by a half dozen points, nor is it necessary to lenghten your points and try and go up and meet a thunderbolt. Let the lightning come to you, says Prof. Loge, and if your roof is well covered with wire netting, you're all right.

DISINFECTING LETTERS.

The terrible scourge of yellow fever which is making such havoc in Jacksonville, Florida, is not from present appearances likely to spread outside of the district to which it is now confined. Rigid quarantine provisions are enforced in all directions around the unfortunate city, and personal access with the outside world is practically impossible to its inhabitants. Neither is there cause to fear infection being communicated through the mail. Letters from the stricken section are fumigated in a novel way, so that there is little or no chance for the disease being brought northward. The letters are all stopped when they reach the quarantine lines. Each letter is put under a machine with a long arm attached, and this is provided with little teeth punctured at the ends. A powder that is used for fumigating purposes is forced through the arm and down through the teeth. The arm comes down on each letter, and while the little teeth are perforating the letter the powder is blown in between the sheets disinfecting the letter thoroughly. Then it is forwarded to the person to whom it is addressed. Some complaint has been heard of damage to letters, but so long as they remain legible a little disfigurement should be welcomed as a proof of protection.

THE AMERICAN ANALYST.

WHAT OUR CONTEMPORARIES SAY OF OUR WORK.

DOMESTIC DIETETICS.

Mrs. Brown's article, "The Household," in the N. Y *Observer* of August 9, says: One of the journals regularly appearing on my table is the AMERICAN ANALYST. Ever full of useful information, I never fail to derive benefit from my examination of it. Some of its columns are devoted to what it calls Domestic Dietetics. What these are the following paragraphs quoted from a late number will show:—

DOING A GRAND WORK.

The AMERICAN ANALYST, a semi-monthly advocate of pure food and the suppression of adulteration, is doing a grand work in its especial field. The first May number is a splendid issue, replete with sound truths regarding food adulterations. The cost is trifling, only $1 a year. —*Fireside and Farm, Ottawa, Kansas.*

Subscriptions $1 per year. Now is the time to subscribe.

IT IS GOING ON.

The AMERICAN ANALYST, for the family and consumer, a semi-monthly advocate of pure food and the suppression of adulteration, at 19 Park Place, New York City, is before us. It is a good paper—doubly so—if the cheating and adulteration is going on that they claim. We see no reason why such a paper should not be well supported, and shall welcome the forthcoming numbers.—*Peabody Reporter, Mass.*

INTERESTING READING.

The AMERICAN ANALYST, for the family and consumer, a New York publication, has been received by us. It is devoted chiefly to the imparting of information relative to matters of health, supplemented by other interesting miscellaneous reading. Each number contains an excellent short story.—*Detroit Sunday Sun, Aug.* 26.

SPEAKING OUT BOLDLY.

The work done by the AMERICAN ANALYST is in the shape of a vigorous warfare against adulteration of food and other articles. Its plan of speaking out boldly, giving the titles of the articles which have been vitiated and the names of the firms who put them upon the market, cannot fail to be productive of good.—*Rome, N. Y., Sentinel, Aug.* 30.

SCIENCE AT THE TOMB.

MORTUARY EMBLEMS BY CHEMICAL SYMBOLS.

The Chicago *Mail* is responsible for the following original epitaph for a cremated wife:

A local cremationist preserves in a mortuary urn the ashes of his late wife. Below the inscription the husband, who is a chemist, has put the composition of the lamented one as follows:

KO.
Na Cl.
Fe S.
Ca O.

DOMESTIC DIETETICS.

SPECIALLY PREPARED, FROM PRACTICAL TESTS, FOR THE LADY READERS OF THE "AMERICAN ANALYST."

SEASONABLE FOOD.

September.

MEATS. — Beef, mutton, lamb, veal, ham, kidneys, liver, venison.

GAME AND POULTRY.—Pigeon, chicken, duck, woodcock.

FISH.—Bass, blackfish, bluefish, clams, cod, crabs, eels, flounder, halibut, herring, lobster, mackerel, mussels, porgie, prawn, rockfish, salmon, trout, sea bass, sturgeon, turtle, white fish, whiting.

VEGETABLES. — Beets, beans, cabbage, carrots, cauliflower, corn, cucumbers, egg plant, garlic, lettuce, onions, parsley, parsnips, potatoes, radishes, rhubarb, savoy, shallots, spinach, squash, tomatoes, turnips.

FRUIT.—Apples, bananas, blackberries, gooseberries, huckleberries, grapes, melons, oranges, peaches, pears, pineapples, plums, raspberries, currants.

PRACTICAL RECIPES.

OATMEAL.—Oatmeal is very nice prepared the following way: Put a piece of butter the size of a hickory nut and a teaspoonful of salt in three pints of boiling water, then add one-half pint of oatmeal; for 20 minutes let it boil fast, stirring frequently; then place it over a saucepan of boiling water, to continue cooking slowly for half an hour. When over the water it will only need stirring occasionally.

EGG WITH HASH.—Hash finely beef, mutton or other cold meat; put it over the fire in a saucepan, with gravy enough to moisten it thoroughly; season well, and when very hot turn it on to a platter and set in the oven. Carefully poach five or six eggs; lay them on top of the hash and serve at once.

GUMBO SOUP.—One chicken, fried brown; one gallon water, four slices of ham; put this on the fire to cook slowly from 8 o'clock to 12 M.; have ready one quart of okra, chopped fine; one pint green corn, one pint tomatoes, peeled; one onion, chopped fine; salt and pepper to taste. Let all cook till done.

FRESH MACKEREL.—Clean the fish; scald a bunch of herbs and chop them fine, and put them with one ounce of butter and three tablespoonfuls of soup stock into a stewpan. Lay in the mackerel and simmer gently for ten minutes. Lift them out upon a hot dish; dredge a little flour, and add salt, cayenne, a little lemon juice, and finally two tablespoonfuls of cream; let these just boil, and pour over the fish.

EGG PLANT.—Cut the egg plant into slices about half an inch thick, without peeling it; lay the pieces in salt and water for half an hour, then drain and dry them. Have ready the beaten yolk of an egg and some fine cracker crumbs. Dip the slices of egg plant into the egg and then into the cracker, and fry to a deep brown on a hot griddle.

AGGIE'S CAKE.—Four eggs, whites and yolks beaten separately; two cups sugar, one-quarter pound butter, one-quarter pound citron, one-half pound currants, one-half pound raisins, one cup and a half of milk; mix stiff with flour, in which has been sifted two teaspoonfuls Horsford's baking powder. Double this and it makes three large loaves.

PEACH CREAM.—Pare and cut into very small pieces a dozen ripe peaches. Put them on the ice, and let them get very cold. Put half a pint of rich cream in a bowl that is set in a bed of chopped ice, and with the egg-beater whip it to a stiff froth; sweeten, and keep in the ice till wanted; then whip the peaches lightly into the cream, pour into a glass dish and serve.

MUSH ROLLS.—Take any cold mush made of cornmeal, oatmeal or hominy, and knead into enough Graham flour, not too course, to form a dough just stiff enough to handle with plenty of flour; make into rolls from three to four inches long and nearly an inch thick, then bake in a hot oven from thirty to forty minutes; this bread is best eaten when warm.

SPONGE CAKE.—One teacupful of powdered or fine white sugar, three eggs, one teaspoonful Horsford's baking powder, one teacupful of flour; flavor with vanilla.

TO WASH A SCARLET AND WHITE WORSTED AFGHAN. —Take one-half teaspoonful of "Strong's patent detergent," and dissolve in a tub of hot water; let it lie five minutes before washing; then squeeze through the water without rubbing, and rinse through clear warm water. When dry it will leave it nice and soft.

TO WASH CHAMOIS SKINS.—Wash in cold water with plenty of soap, and rinse well in clear, cold water; thus treated the skins will never be hard, but soft and pliable.

WHERE THE MONEY GOES.—According to the *Financial Times* the immense bottle factory of Fred. Heye, at Gerresheim, near Dusseldorf, covers an area of sixty acres, and has a capacity of about 300,000 bottles per day. The orders for America amount lately from 300,000 to 500,000 weekly. From 10,000,000 to 15,000,000 of a certain kind of mineral water bottles are yearly ordered by a London firm.

REVIEWS OF NEW BOOKS.

THE WHEREWITHAL; OR, NEW DISCOVERIES IN CAUSE AND EFFECT. Philadelphia: Werewithal Manufacturing Publishing Co.

There is unluckily no royal road to knowledge. It is one of the inexorable limitations of human nature that every individual must begin his course of intellectual acquisition from the identical starting point of ignorance at which his predecessors through all time have started The pre-historic infant was as wise in its generation as is to-day the infant "heir of all the ages" beginning its career on the threshold of the twentieth century. The short term of human life allows only a limited amount of acquirement to any individual, and when the man dies the light goes out with him, so far as regards the rest of humanity, excepting that once in a while a spark of thought, brighter than common, flashes on a little longer, contributing, until extinguished or eclipsed, its share to the general enlightenment. Human progress, it is true, invests the modern child with a great advantage in the general superiority of the surroundings by which its earliest intelligence is excited, but the forces of progress and heredity combined fail to alter the fact that every item of knowledge has to be learned by each individual separately through a course of gradual acquisition, which is hardly begun before it is suddenly ended. We rebel against the tediousness of the process, but our efforts to overcome it are ineffectual. The most that can be done, apparently, in that direction is to formulate for adult students methods of systematic attention, which, by artificially stimulating the memory, promote the capacity for permanent acquisition. These schemes are as old as the time of Aristotle, who, 2,400 years ago, distributed under ten general heads, which he called "The Ten Categories," all the information that could be asked or given about any given subject, creating, so to speak, a mental framework or stencil plate, into which every possible subject of cognition could be fitted. The various systems of mnemonics which are constantly springing up, and as constantly falling again, are devised as instruments to the same end. A radical difficulty with the majority of these is that the formulas necessary to be carried in the mind in order to produce the desired results of contiguous association are so complicated as to render them as difficult to recall as it is to remember the subject aimed at. An ingenious Philadelphian has recently invented and introduced an educational method to which he applies the somewhat fanciful name of "The Wherewithal system." As its peculiar character would render it unfair for us to explain its details to the public, we will simply remark concerning it that it is based upon logical grounds and seems qualified by a very simple process to guide the intellect into habits of broad inquiry, and at the same time to train the memory into a method of corresponding retentiveness.

ALDEN'S MANIFOLD CYCLOPEDIA. Vol. VII. New York: John B. Alden.

John Calvin, the first title in Vol. VII. of Alden's Manifold Cyclopedia, occupies seven pages, and Cevennes, the last title, the name of the chief mountain range in the south of France, is given nearly one page. Between these there are over 600 pages, including considerably over 100 illustrations, devoted to topics in every department of human knowledge. There is a wonderful variety and comprehensiveness of knowledge embraced within the scope of the work. It is an ordinary Cyclopedia of Universal Knowledge and an Unabridged Dictionary of Language in one, the editorial work being in skillful hands; the mechanical work, paper, printing and binding, all that one can reasonably wish; the form convenient beyond all precedent in works of reference, and the cost so trivial as to be really astonishing.

OLIVES FOR DYSPEPSIA.—A writer in *Table Talk* urges the dyspeptic to learn to eat olives as a means of repairing and lubricating the weak stomach, a means which he declares to be more efficient than all the pills and medicinal draughts ever concocted.

BISMUTH TEST.—Mr. F. B. Stone states that bismuth in very dilute solution, with a very minute amount of free sulphuric acid, with a strong solution of potassium iodide dropped into it, produces a bright-yellow color, and that this reaction will show when the bismuth salt is only one part in a million.

THE BRITISH DEBT.—The national debt of Great Britain is over $3,500,000,000. The cost of management of the debt by the Bank of England and the Bank of Ireland is $1,000,000 a year. The annual interest and cost charges of the debt, which is permanent, amounts to $97,250,000 a year, about $2.50 per capita of the population of the United Kingdom.

NATIONAL WEALTH.—The wealth of the principal nations is set down as follows: The United States, $57,000,000,000; France, $46,500,000,000; Great Britain, $46,000,000,000; Germany, $25,000,000,000; Russia, $15,000 000,000; Austria, $14,000,000,000; Italy, $8-000,000,000; Spain, $7,500,000,000; Asia, $65,000,000,-000; Africa, $5,000,000,000; British Columbia, $5,000,-000,000.

A QUICK FILTER.—Take a clear piece of chamois skin, free from thin places; cut it of the desired length; wash it in a weak solution of salsoda or any alkali, to remove the grease, and rinse thoroughly in cold water before using. Tinctures, elixirs, syrups, and even mucilages, are filtered rapidly. A pint of the thinnest syrup will run through in four or five minutes. By washing thoroughly after each time of using, it will last a long time.

CLAY SOAP IN CALIFORNIA.—A California company is about to begin the manufacture of soap from clay containing soap properties, presumably similar in character to the natural soap well which has been discovered near Buffalo Gap, in Dakota. The soap is skimmed from a boiling spring and hardens by exposure to the air. It is like soft clay and can be gathered with a shovel. It is supposed to be a mixture of borax, alkali and lubricating oil.

A NEW SUPPORT FOR FUNNELS.—Mr. Meurer describes a new support for funnels while drying. It is made in the following manner: Two horizontal parallel bars of glass tubing are supported by pieces of glass rod which have their ends bent upwards till they nearly meet, and thrust into the ends of the tubes, which are bent downwards at right angles. A small hook of glass rod prevents the bars from springing apart under the weight or the funnels which rest between them.

PROGRESS OF THE AIR-BRAKE.—Eighteen years ago, when the air-brake was tried, it required eighteen seconds to apply it to a train 2,000 feet long. Four years later the time was reduced four seconds. Recent experiments with the air-brake on freight trains show that it can be applied to every car on a train of that length running at the rate of forty miles an hour, and that this train can be stopped within 500 feet, or one-fourth of its own length and without any serious jolting.

TO GET RID OF FLIES.—It is stated that oil of bay is used in Switzerland by butchers to keep their shops free from flies, and that after a coat of the oil has been applied to the walls none of these troublesome pests venture to put in an appearance. This remedy has also been tried and found effectual in the south of France in preserving gilt frames, chandeliers, etc., from becoming soiled. It is remarked that flies will soon avoid the rooms where this application has been employed.

POTABLE SEA WATER.—George J. Hazlehurst, of Rhyl, North Wales, describes in a communication to a Liverpool paper the results of prolonged experiments he has made with the view of making sea water drinkable and innocuous by the introduction of foreign elements. Mr. Hazlehurst claims to have invented a compound which he calls "Thalassion," and which consists apparently of a saline effervescent with some astringent ingredient, which mixed with sea water makes it drinkable.

DELICATE INSULATOR.—A very valuable insulating material has just been produced. It is composed of one part Greek pitch and two parts burnt plaster, by weight, the latter being pure gypsum, raised to a high temperature and plunged in water. This mixture when hot is a homogeneous, viscous paste, and can be applied by a brush or cast in molds; it is amber colored, and possesses the insulating properties of ebonite, and can be turned and polished. Its advantages are its endurance of great heat and moisture without injuring its insulating properties.

A PROPERTY OF BASSWOOD.—Basswood is capable of being enormously compressed, but if after being subjected to great pressure it be exposed to the action of steam it entirely regains its original bulk. It is said that advantage is taken of this in the production of so-called carved mouldings. The carved pattern is stamped by dies deep into the wood, the surface of which is then planed down to the level of the lowest depression. If now the wood be steamed the parts originally depressed will regain their original bulk, and will thus form in relief the pattern of the dies.

A MARINE DEVICE.—The principle of the anemometer, the instrument which is generally used for measuring the velocity of the wind, and which is, essentially, a small, delicately poised self-registering windmill, with flat or cup-shaped arms, has been applied to a device for registering the speed of vessels. The little mill, made very strong and protected as far as possible, without interfering with its accuracy, from accidental blows, is placed under the keel of the vessel amidships. Its velocity varies, of course with the varying speed of the vessel, and its motion is communicated to a small vertical shaft which passes up through the ship to a point on deck, where the number of revolutions is registered upon a properly constructed dial.

THE COMMERCIAL VALUE OF SCIENCE.

While all people are as one to-day in their recognition of the immeasureable practical and pecuniary value of modern science, but few seemingly realize the importance it now possesses in nearly all the great industries of the civilized world. No great manufacture exists but whose success or fame depends upon the utilization of the highest and most recent scientific thought. No where is this better illustrated than in the status of the house of Dr. J. C. Ayer & Co., the famous manufacturing druggists and chemists. Beginning on a modest basis in the first half of the century, they inaugurated their commercial career by the then unheard of expense of retaining the most brilliant scientists of the land, to supervise every branch of their business to which invention and discovery were applicable. Thus in the preparation of their celebrated almanac they secured the services of the best astronomer, physician, and writer that money could procure. The apparent extravagance of the transaction was more than justified by the results. The literary excellence of the almanac won the esteem of the reading public, and in a few years raised its circulation from several thousands far up into the millions; its concise but thorough treatment of medical, pharmacal and chemical problems earned the esteem of physician and apothecary, and made it a welcome visitor to every doctor's office and drug-store in the land. Its magnificent astronomical work won the confidence and excited the admiration of the mathematical, maritime, and geographical world, and gave it a place in every library owned by followers of these pursuits. A comparison of Ayer's almanac with the nautical almanacs published by the United States and European governments, and with the *ephemeres* of astronomers and astrologers show the first in order, to be the first in excellence as well. For this reason it is now officially employed in the nautical observations of this country and of England. Another curious commentary upon the mathematical value of Ayer's almanac is, that it has driven all other astronomical tables out of use among the hundreds of thousands who still believe in horoscopes, nativities, and the other features of ancient astrology.

Nor is the popularity confined to Christendom, or its vast circulation to the Indo-European race. It is equally esteemed by the pundits of India, the Parsee scholars, the mandarins of China, and the professors of Japan. The Orient has from time immemorial devoted more time to star-lore than the West, and find in Ayer's almanac the highest mathematical precisions extant.

But it is the manufacture of medicines that the house of Ayer has utilized science to the uttermost. There is not a pharmacal process but which has been altered, if not revolutionized, by chemical research. In filtering, for example, the druggist of 1820 used a glass or tin funnel with a paper or rag septum. This system made place for the simple percolator, the endless percolator, the boneblack continuous filter, and after many stages the centrifugal with boneblack attachment. The method to-day employed by Ayer & Co. does a thousand times more per diem of finer and more uniform work than what was possible in 1840.

A similar progress has occurred in the use of the fine vegetable oils which are employed in the fabrication of Ayer's Hair Vigor, and other superior capillary medicaments and dressings. These oils always vary in their raw state in color, consistency, and composition. Hair preparations in which they were constituents betrayed a similar variability. Chemical science soon found that by refrigeration and pressure all these oils could be rendered homogeneous, and that by careful filtering could be improved in almost any desired direction. The only requisites are highly skilled workmen and expensive machinery and chemical processes. These, and nothing else, are used by Ayer & Co., and give their products the reputation they so universally enjoy.

In the preparation of such goods as Ayer's Sarsaparilla, Cherry Pectoral and Cathartic Pills, the chief condition is the absolute purity, freshness, and uniformity of the ingredients, and the perfect regularity of all the processes employed. Not only should a standard article be exactly the same in New York as in Pekin, but it should look, taste, feel, and smell the same. Where it does not comply with the latter rule, it causes the patient to lose that most valuable of all healing forces, confidence in what he is using. This uniformity, medicinal and mechanical, is obtained by manufacturing upon a vast scale, by carrying huge supplies of raw materials, and preserving them according to the latest dictates of science, by utilizing chemistry, physical and mechanical science, and employing the precautions these teach. All this is done by Ayer & Co.; it constitutes the intrinsic value of their productions, and underlies the success and fame which they long ago achieved and still possess.

BUSINESS NOTES.

HORSFORD'S ACID PHOSPHATE.

Dr. O. C. Stout, Syracuse, N. Y., says: "I gave it to one patient who was unable to transact the most ordinary business because his brain was 'tired and confused' upon the least mental exertion, and immediate benefit and ultimate recovery followed."

CROCKERY WASH-TUBS.

The most rigid scientist, while disagreeing with Brother Jasper in his famous utterance, is fully as dogmatic as he is in declaring that "the world do move." We know this better and better every day, and by no means so well as by the wonderful improvements that are made from year to year in the primitive contrivances that served our forefathers. There is no greater difference between the palanquin of India, or the jinrickshi of Japan and the vestibule train, than there is between the mechanical appliances of a century ago and those of to-day. Tools are better, workmanship is better, and scientific principles are more universally understood and applied than ever before in any civilization of which the record survives. This is specially true of household matters.

Our houses are not only built better with regard to sanitary conditions and modern luxury and beauty, but they are furnished throughout with appliances for necessary household work, far superior to anything dreamed of before our day. No more complete illustration of this can be found than in the latest improvement that has been made in such humble things as sinks and wash-tubs. In olden times these were made of wood, as everybody knows. The laundress lugged her tub to the river side, where there should be plenty of water, and laboriously dipping from the stream what was wanted, scrubbed, soaked, rinsed and wrung out her clothes with infinite toil, and at the conclusion of the day emptied out the tub and left it for the sun and air to dry and sweeten. Then, because in drying, the wood warped, shrank and split, she was forced to keep water in it nearly all the time, so that the drying and sweetening process was forever held in abeyence. Between the rotting from perpetual moisture and the warping from occasional drying, the wash-tub was always in danger and required constant care. The housewife in the kitchen needed her sink, and this was made of wood also. Running through it, foul water always left a deposit more or less unwholesome and dangerous, which soaking into the wood could never be removed until the sink itself, rotten and noisome with accumulated filth, was torn away to make room for another like unto it, which in turn began to secrete putrefying particles which we now know to be microbes and bacteria. As time went on, and cities became more crowded, tubs could no longer be carried to the river, and the "set tub" of modern times was substituted with pipes so attached that the water should flow through it. Still it was made of wood, and the difficulty of keeping it pure increased until it grew to an impossibility, and it was realized that wood was a totally unfit material to use. Then experiments began which have finally developed a perfect tub or sink such as is made to-day by the Stewart Ceramic Company of this city. Soapstone and slate were tried as being substances impervious to water and incapable of absorbing any appreciable amount of corruption from foul water. They would not rust, warp nor shrink from repeated wetting and drying, and though both are somewhat too brittle for such use, they presented a fairly good surface for the inside of the sink or tub. It was impracticable however to make tubs of this material without seams and these seams had to be sealed with cement, so another step was taken. If cement were good for the seams, why was it not a good material for a lining for the whole tub? So the manufacturers questioned, and there was no answer, so they made cement tubs, and fondly thought they had solved the problem. Unfortunately cement proved to be good neither for seams nor for complete linings. It was soon found that the free alkali which is a necessary ingredient of the laundry soap was certain to attack certain constituent parts of the cement, and that the constant action of water combined with this cause in disintegrating the cement. This made a rough surface, not only objectionable in use, but serving to harbor impurities and make thorough cleansing impossible. And finally, unless the tub should be made preposterously thick it would be eaten through and become leaky and useless. All these objections are fully met by the tubs made by the Stewart Ceramic Company. These are of solid white crockery thoroughly glazed and offer numerous advantages over any other tub or sink that is made. They are made, in the first place, in one piece without seams, and this fact together with the smoothness and imperviousness of the material renders it impossible for any impurities to find lodgment, and so does away with all offensive odors and all danger of infection, a most important consideration especially in hospitals. They are strong and may be set up in the strongest manner by usual means, so that they are not liable to breakage even when roughly used. And finally they are made so as to avoid the necessity of soap-dishes or wooden wash-boards. A moulded recess in one corner holds the soap, and a corrugated surface moulded on one side of the tub makes a perfect wash-board. If it be true that he who lightens human labor, and avoids sanitary peril is doing good to mankind, this company has done a great good.

A TELLING ADVERTISEMENT.

One of the most telling advertisements we have seen is that of the Travelers' Insurance Company of Hartford. It simply represents a large safe door bearing the name of the company and the cash assets of ten millions of dollars, with two millions surplus, guarded by a dignified, large, powerful mastiff, at whose heels numerous curs of various sizes, each fastened to a small safe, are snarling. One safe is apparently so empty and light that the little toy-dog attached to it, in his eagerness to get at the Travelers' mastiff, has pulled it over. It is an amusing but impressive way of calling attention to the staunchness of this the American pioneer company.

A NEW IRON PREPARATION.

The Rio Chemical Company of St. Louis have just put upon the market a new preparation, which they have named Liquid Iron-Rio, containing one grain of iron to each drachm. It is very palatable, easily assimilated, and will be retained when all other forms of iron are rejected. It is compatible with nearly every other drug, and, as it does not stain the teeth, should become a universal favorite. The company will gladly send samples to any practitioner.

PEACOCK'S BROMIDES.

I have used Peacock's Bromides in a number of cases of infantile convulsions with gratifying results. One case of a child eighteen months old had been given up by the attending physician; by giving ten drop doses the child made a rapid recovery and has had no return of the trouble. In a case of hysterical mania, a lady of thirty-five years, found her making lively work for a number of persons to take care of her; drachm doses soon quieted her; she has had no trouble of that kind since. A boy of twelve years old recovering from diphtheria, partial paralysis of limbs, double vision and inability to speak distinctly, made a good recovery with its use; also several cases of palpitation of heart. Am pleased with your preparations, and shall continue to use them when indicated.

D. W. ROBERTSON, M. D.

Providence, R. I.

Subscriptions $1 per year. Now is the time to subscribe.

Horsford's
ACID PHOSPHATE.

A preparation of the phosphates of lime, potash, magnesia and iron, and phosphoric acid, in solution, that is readily assimilated.

Especially recommended in all cases where the use of phosphoric acid or the phosphates is indicated, such as exhaustion of the physical, nervous and cerebral systems, gastric and liver derangement, gravel, and other calcareous deposits, cholera, scurvy, consumption, etc.

As a menstrum for the administration of strychnina, morphina, quinina, and other organic bases which are usually exhibited in acid combination, it is unsurpassed.

It makes a delicious drink with water and sugar only, and harmonizes with such stimulants as are necessary to prescribe.

Dr. G. F. WILBER, Nashua, N. H., says: "It is a very elegant method of using phosphorus."
Dr. T. C. SMITH, Charlotte, N. C., says: "I attach the highest importance to it as a therapeutic agent, of well-defined and specific value."
Dr. C. EARLE, Pontiac, Mich., says: "I do not hesitate to recommend it to the confidence of the profession."
Dr. T. B. PORTER, Freeport, Ill., says: "It is an excellent therapeutic agent."
Dr. I. W. MARTIN, Des Moines, Ia., says: "I take pleasure in adding my testimony as to its therapeutic value."
Dr. E. BROWN, Omaha, Neb., says: "I find it a very useful remedy."

Send for descriptive circular. Physicians who wish to test it will be furnished a bottle on application, without expense, except express charges. Prepared under the direction of Prof. E. N. HORSFORD, by the

Beware of Substitutes and Imitations.

RUMFORD CHEMICAL WORKS, PROVIDENCE, R. I.



If you Value

Clean Homes and Clean Clothes

If you have any feeling for the poor souls who make them so, lighten their tasks by supplying them with

Pyle's Pearline Washing Compound.

You will have better results, happier servants—they will have more time for rest or other work. Your clothes will not be rubbed to pieces. You will not be under any increased expense, and you will have taught your help to use their heads in the right direction, rather than their muscle in the wrong. Give Pearline a fair trial *without soap* or any other preparation. Millions are using it. Beware of imitations and peddlers.

Sold everywhere. Pearline is manufactured only by JAMES PYLE, New York.

$93 Sewing Machine Free!

We want one person in every village, town and township, to keep in their homes a line of our ART SAMPLES; to those who will keep and simply show these samples to those who call, we will send, free, the very best Sewing Machine manufactured in the world, with all the attachments. This machine is made after the SINGER patents, which have expired. Before the patents run out, this style machine, with the attachments, was sold for $93; it now sells for $50. Reader, it may seem to you the most WONDERFUL THING ON EARTH, but you can secure one of these machines ABSOLUTELY FREE, provided your application comes in first, from your locality, and if you will keep in your home and show to those who call, a set of our elegant and unequaled art samples. We do not ask you to show these samples for more than two months, and then they become your own property. The art samples are sent to you ABSOLUTELY FREE of cost. How can we do all this?—easily enough! We often get as much as $2,000 or $3,000 in trade from even a small place, after our art samples have remained where they could be seen for a month or two. We need one person in each locality, all over the country, and take this means of securing them at once. Those who write to us at once, will secure, FREE, the very best Sewing Machine manufactured, and the finest general assortment of works of high art ever shown together in America. All particulars FREE by return mail. Write at once; a postal card on which to write to us will cost you but one cent, and after you know all, should you conclude to go no further, why no harm is done. Wonderful as it seems, you need no capital—all is free.

Address at once, TRUE & CO., AUGUSTA, MAINE.

A GOOD INCOME.

We have enabled several gentlemen and ladies to add largely to their incomes by paying them liberal commissions on subscriptions.

For further particulars address

AMERICAN ANALYST,

19 Park Place, New York.

WANTED.

A young chemist wishes a situation as assistant in works or laboratory. Best references.

ADDRESS, Y. D.,

Office AMERICAN ANALYST.

Who Doesn't Want a Baby

Healthy and happy? Keep the baby in health by feeding it on

RIDGE'S FOOD.

25 years of use by thousands in all parts of this country confirm these statements. WOOLRICH & Co. on label.

Natural Lithia Water.

FARMVILLE LITHIA WATER

FROM VIRGINIA.

—Not only Relieves, but—

CURES

Bright's Disease, Kidney Troubles of all Kinds, Rheumatism, Rheumatic Gout, Dyspepsia, Bladder Troubles, Diabetes, Calculi, Albuminuria. Without Taste or Odor. An Unapproachable Record in Results.

Sold by HAZARD, HAZARD & Co., Fifth Avenue Hotel, and other first-class Pharmacists. Pamphlet free upon application.

FARMVILLE LITHIA SPRINGS CO.,

298 Broadway, New York, and Philadelphia.

Subscriptions $1 per year. Now is the time to subscribe.

LEA & PERRINS' SAUCE.

Lea & Perrins', the original and genuine Worcestershire Sauce, has been before the public over a half a century. Like all popular favorites it has long been the standard of comparison and the pattern for counterfeiters who not being able to imitate its excellence offer to the public imitations in bottling, labels and style of putting up. They dare not counterfeit the signature of Lea & Perrins which is on the red label of every genuine bottle, and of which this is a facsimile.

Lea & Perrins

To be sure of obtaining the genuine article, see that the above signature is on the label.

ANALYZE "MONON" Resolutions!!

Whereas, The Monon Route wishes to make known to the world that it has the finest system of Pullman Buffet Sleepers and Chair Cars, running between Chicago and Louisville, or Chicago, Indianapolis and Cincinnati;

And Whereas, This makes it in fact the double connecting link of Pullman travel between the winter cities of Florida and the northern summer cities; then

BE IT RESOLVED, That, before starting on a trip, be sure and address E. O. McCormick, Gen'l Pass. Agent, 185 Dearborn Street., Chicago, for rates, etc.

OUR SPECIALTIES ARE

Choice Bottled Ciders

—AND—

Pure Cider Vinegar,

For Hotel and First-Class Trade.

T. P. ROGERS & SON,

370 to 376 Washington Street,

NEW YORK.

SPECIAL HARVEST EXCURSIONS.

The Northern Pacific R.R. announces a series of five special Harvest Excursions from St. Paul, Minneapolis, Duluth and Ashland to principal points in Minnesota, Dakota and Montana during August, September and October. Parties contemplating a trip for pleasure, business, or with a view of selecting a new home can avail themselves of rates lower than ever before announced to visit the wonderful country tributary to the Northern Pacific R.R.

Tickets will be on sale at St. Paul, Minneapolis, Duluth and Ashland on August 21st, September 11th and 25th, and October 9th and 23d, limited to thirty days from date of sale, and good for stop-over on going passage. These rates to Montana points are about one cent per mile each way, and in some cases about half of the one way fare for the round trip.

Connecting lines east and south of St. Paul, Minneapolis and Duluth will sell tickets in connection with these excursions at one fare for the round trip.

The dates named will be a very opportune time to visit the wheat fields of Minnesota and North Dakota: also to see the cattle ranges of Montana. Everybody should bear in mind that the Northern Pacific R.R. is the short and direct line to principal points in Montana, and the only line running either dining cars, Pullman sleeping cars, or colonist sleeping cars to Fargo, Grand Forks, Fergus Falls, Wahpeton, Jamestown, Helena, and principal points in Northern Minnesota, North Dakota and Montana.

For rates and other information apply to Chas. S. Fee, General Passenger and Ticket Agent, St. Paul, Minn., or nearest ticket agent.

J. HENRY HENTZ. J. P. ROBINETT. J. HENRY HENTZ, Jr.

ESTABLISHED 1793.

WHITE, HENTZ & CO.,

SOLE PROPRIETORS OF

Trimble and Pennsylvania Monogram Whiskies.

222 and 224 NORTH SECOND ST., PHILADELPHIA.

D. LIEBER, 17 South William St., New York. Col. H. A. SELIGSON, 1200 Pennsylvania Ave., Washington, D. C.

NATRONA BI-CARBONATE OF SODA.

(ABSOLUTELY PURE.)

NATRONA



TRADE MARK

SODA

The nature of the raw material from which NATRONA BI-CARBONATE OF SODA is made—viz., kryolith, a mineral containing *pure sodium*—insures a purity and uniformity of product which cannot be obtained from any other known material. In making BI-CARB. SODA from any other raw material, the use of sulphuric acid is a necessity, but none is used in any part of the process of making NATRONA BI-CARB.; hence its entire freedom from the slightest trace of arsenic, which is always present in ordinary soda. Its absolute purity and entire freedom from all traces of *sulphate of soda*, common salt and other impurities, render NATRONA BI-CARB. NEARLY TASTELESS, and being bolted through the finest bolting-cloth, insures the finest stage of division.

To these indisputable facts the attention of CONSUMERS of soda is specially called. They are IMPORTANT, and should influence both those who use and those who sell soda, to buy and sell NONE BUT THE BEST.

The NATRONA BI-CARB. Soda is kept in stock by almost every wholesale druggist and grocer throughout the United States, of whom it may be ordered.

Natrona Bi-Carb. Soda is unequaled by any other brand of English or American Manufacture.

PENNA. SALT MANUFACTURING CO.,

NATRONA CHEMICAL WORKS. PHILADELPHIA, PA.

ALTHENE SKIN SOAP

An absolutely pure and perfect soap for all purposes of the toilet, nursery, bath or sick-room. Has the approval of leading chemists and physicians, and is recommended by all who have used it. Price 25 cts. a cake, or 65 cts. for a box of three. Can be obtained of the retail druggists or from

J. W. CAMPION & CO., 916 Filbert Street,

PHILADELPHIA.

AMERICAN ANALYST CLUB RATES.

	Regular Price.	Price including American Analyst.		Regular Price.	Price including American Analyst.
American Magazine	$3 00	$3 00	Harper's Young People	$2 00	$2 25
American Rural Home	75	1 05	Harper's Weekly	4 00	4 00
American Agriculturist	1 50	1 60	Harper's Monthly	4 60	3 50
Arthur's Home Magazine	2 00	2 00	Household	1 10	1 35
Babyhood	1 50	1 60	Housekeeper	1 00	1 25
Ballou's Magazine	1 50	1 75	Ledger	3 00	3 00
Cassell's Family Magazine	1 50	1 75	Lippincott's Magazine	3 00	2 25
Century	4 00	4 00	New York Weekly	3 00	3 00
Christian Herald, N. Y.	1 50	1 50	Our Little Ones and Nursery	1 50	1 65
Christian Union	3 00	3 00	Peck's Sun	2 00	2 25
Country Gentleman	2 50	2 50	Peterson's Magazine	2 00	2 00
Demorest's Magazine	2 00	2 00	Puck	5 00	4 50
Family Story Paper	3 00	3 00	Rural New Yorker	2 00	2 30
Farm and Fireside	50	1 00	Saturday Night, Philadelphia	3 00	3 00
Fireside Companion	3 00	3 00	Saturday Evening Post	2 00	1 40
Frank Leslie's Illustrated Newspaper	4 00	4 00	Scientific American	3 00	3 25
Frank Leslie's Popular Monthly	3 00	3 00	Scribner's Magazine	3 00	2 75
Galaxy of Music	1 00	1 25	Vick's Illustrated Monthly	1 25	1 50
Gleason's Home Circle	2 00	1 50	Western Rural	1 50	2 00
Godey's Lady's Book	2 00	2 25	Wide Awake	2 40	3 00
Golden Days	3 00	3 00	Yankee Blade	2 00	1 75
Good Housekeeping	2 50	3 00	Young Ladies' Journal	4 00	2 25
Harper's Bazar	4 00	4 00	Youth's Companion	1 85	2 25

If any paper is desired, not mentioned in the above list, a postal card inquiry will receive a prompt reply. Address,

THE ANALYST PUBLISHING CO.,

19 Park Place, New York.

MALTED MILK

THE ONLY FOOD

For Infants and Invalids

THAT CONTAINS ALL THE ELEMENTS OF NUTRITION, WITHOUT A SINGLE ADDITION.

MALTED MILK does not have to be cooked.

MALTED MILK needs no addition of milk, only to be stirred up with water, which can be done without the slightest fuss or trouble.

MALTED MILK will not spoil in hot weather.

MALTED MILK is always ready for immediate use night or day, when traveling or at home.

MALTED MILK does away with the danger of using sour or impure milk.

MALTED MILK is free from starch and cane sugar. All foods that have to be cooked contain starch.

Ask your physician his opinion of **MALTED MILK**, he knows all about it.

Price, . . . 50 Cts. | Large Size, . $1.00

Extra Large Glass Jars for hospital and family use, ... $3.75

These contain five times the quantity of the $1.00 bottles.

A sample bottle will be sent free to any Mother or Invalid sending their address to

MALTED MILK CO.

RACINE, WISCONSIN, U. S. A.

THE TORSION

Braided Wire Mattress.

At all times a thoroughly ventilated and perfectly clean mattress, it cannot absorb odors, or retain exhalations or disease germs.

D. HAYES AGNEW, M. D., Prof. of Surgery, University of Pennsylvania, says:

"The Torsion Braided Wire Pillow and Mattress I regard as superior to anything of the kind now in use; well suited for either private or hospital use.

Prof. WM. H. PANCOAST, late Professor of Anatomy, etc., in Jefferson Medical College, now Professor of Anatomy and Clinical Surgery in the Medico-Chirurgical College of Philadelphia Hospital Surgeons, says:

"I have used in my surgical practice your Braided Wire, in the form of mattresses, pillows for the head and body, and short pillows for the arm and leg when injured. I find them most admirable, cool and light, yet affording perfect and elastic support.
I have saved a patient from bed sores by the use of the Braided Wire mattress."

WM. H. FORD, President Board of Health, Philadelphia, says:

"I have used the Torsion Braided Wire Mattress with great satisfaction, it is light and therefore easily handled; it is elastic and very comfortable. The case can be easily removed to afford a complete airing, a feature of great importance from a health point of view.
It is an invention of great usefulness.

For descriptive circular and price list, send to

The Torsion Braided Wire Upholstering Company,

1017 CHESTNUT ST., PHILA.

"BILLET"

are

Carefully Selected French Sardines,

Packed in Choicest Olive Oil.

AT ALL LEADING GROCERS.

Any Retail Druggist in the United States who desires to obtain Advertising Matter, Show Cards, Signs, etc., which will assist and instruct him in the sale of Harriet Hubbard Ayer's Recamier Toilet Preparations and Vita Nuova, should address THE RECAMIER MFG. CO., 52 and 54 Park Place, New York City.

UNEQUALLED Ask your Grocer for, and insist on having, **LEA & PERRINS'** Sauce, "The Worcestershire." It is known throughout the whole civilized world as the Best and most Delicious Sauce. **DELICIOUS.**

SCOTCH MARMALADE, Jams, Fruit and Wine, Jellies, &c.
By James Keiller & Son, Dundee.

SCOTCH BISCUITS, Albert, Water, and Oat Cake,
By Robert Middlemass & Son, Edinburgh.

RACAHOUT des Arabes, by De Langrenier, Paris.

BAY WATER, West India, (J. D. S. brand), in cases, one dozen bottles.
Sold by all first-class Grocers.

JOHN DUNCANS' SONS, 43 Park Place, New York. Agents for the United States.

Robert Gordon's
TRADE MARK.
SPICED · SEA · FOODS
(IN GLASS.)
OYSTERS, LITTLE NECK CLAMS, MUSSELL, SHRIMP, LOBSTER, Etc.,
Packed in 8 and 16 oz. Jars. Guaranteed to be strictly Pure.
MADE OF THE FINEST MATERIALS.
—ALSO,—
ROBERT GORDON'S CONDENSED CLAM CHOWDER,
In 3-lb Cans. Cheapest and Best in the Market.
MANUFACTURED BY
JONES, GORDON COMPANY, Limited,
204 West Street, New York.

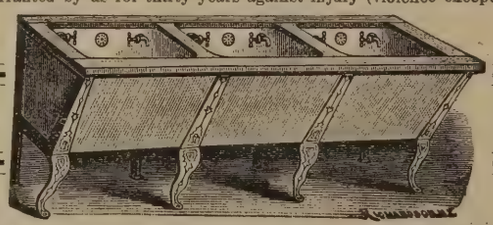


GOLD MEDAL, PARIS, 18[illegible]
BAKER'S
Breakfast Cocoa.
Warranted *absolutely pure Cocoa,* from which the excess of Oil has been removed. It has *three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup.* It is delicious, nourishing, strengthening, easily digested, and admirably adapted for invalids as well as for persons in health.
Sold by Grocers everywhere.
W. BAKER & CO., Dorchester, Mass.

Sura Cura
ROBINSON'S SURE CURE FOR
RHEUMATISM
And NEURALGIA,
And remedy for diseases arising from an impure state of the blood. An antidote for **MALARIA.** Price 50 c. and $1. Sent by mail on receipt of price.
Send for Circular.
R. W. ROBINSON & SON,
184 Greenwich Street,
NEW YORK.
Sura Cura

STEWART CERAMIC CO.,
312 PEARL ST., Cor. Peck Slip, NEW YORK.
Sole Manufacturers under Morahan's Patents of
SOLID WHITE CROCKERY STATIONARY WASH TUBS
Warranted by us for thirty years against injury (violence excepted).

CANNOT LEAK.



VERY STRONG.

This cut shows three Tubs set up with galvanized iron stands and heavy ash frame firmly secured on top.
SMOOTH GLAZED SURFACES. ALWAYS CLEAN.
The only solid white crockery Washtub ever made in the world. Do not buy imitations until you see the genuine "Morahan's Patent," stamped on every tub. Washboard and Soapcup moulded in every set.
SOLID WHITE CROCKERY SINKS
Made of same material as the Tubs and fully as strong.
Send for Illustrations and Price Lists. **Send for Illustrations and Price Lists.**

Good Subscription Agents wanted by AMERICAN ANALYST.

CALIFORNIA
Fine Table Wines
From our Celebrated Orleans Vineyard.
Arpad Haraszthy & Co
Producers of the
ECLIPSE
CHAMPAGNE,
530 Washington St.
SAN FRANCISCO.
PARK & TILFORD. New York, } Agents.
C. JEVNE & CO., - - Chicago, }



FACIAL BLEMISHES.
the Largest Establishment in the World for their Treatment. Facial Development, Hair and Scalp, Superfluous Hair, Birth Marks, Moles, Warts, Moth, Freckles, Wrinkles, Red Nose, Acne, Pimples, Bl'k Heads, Scars, Pitting, etc., and their treatment. Send 10c. for book of 50 pages, 4th edition.
Dr. JOHN H. WOODBURY,
37 North Pearl St., Albany, N. Y.
Established 1870. Inventor of Facial Appliances, Springs, etc. Six Parlors.

THURSTON'S IVORY PEARL TOOTH POWDER
WILL KEEP THE TEETH IN PERFECT CONDITION AND THE GUMS HEALTHY.
Price 25 & 50 Cents PER BOTTLE.

HORTON, CATO & CO.'S
ROYAL SALAD DRESSING.
TRADE MARK.
HORTON, CATO & CO.
DETROIT, MICHIGAN.
A SUPERIOR DRESSING FOR LOBSTER, CHICKEN AND ALL SALADS. ALSO COLD MEATS, SALMON, LETTUCE, TOMATOES CABBAGE, ETC. MANUFACTURED WITH GREAT CARE FROM WHOLESOME, PURE AND CHOICE CONDIMENTS. NONE GENUINE UNLESS BEARING OUR TRADE MARK AND SIGNATURE.
Horton Cato & Co
DETROIT, MICH.
"ROYAL" SALAD DRESSING.
The best prepared Dressing, always fresh, does not turn oily, rancid or decompose as other dressings of a similar nature.
"ROYAL" WORCESTERSHIRE SAUCE,
The Peer of American Product.
HORTON, CATO & CO.,
SOLE PROPRIETORS AND MANUFACTURERS,
DETROIT, MICH.

GOOD AGENTS wanted to solicit subscriptions for the AMERICAN ANALYST. Apply 19 Park Place, N. Y.

All Postmasters will receive subscriptions for the AMERICAN ANALYST.

KEITH'S
CON. TINC. AVENA SATIVA
(From Common Oats.)
Without Admixture of any Kind.
A Powerful Nerve Stimulant, Tonic, Etc.
Was first offered to the medical profession by B. Keith & Co., in 1881, as a remedy to be employed in the treatment of
Paralysis, Epilepsy, St. Vitus' Dance, the Morphia or Opium Habit, Chloral and Tobacco Habits, Sleeplessness, Nervous Debility and Exhaustion, Neuralgia, Alcoholism Painful and Deficient Menstruation, Headache, Hysteria, Impotency, Convulsions and Prostration from fainting, and in the Convalescent stage of all Acute Diseases.
Dose.—From ten to thirty drops, or more, as often as may be indicated to meet the urgency of the case. Administer in hot water when quick action is desired.
An Overdose Causes Pain at Base of Brain.
——WE MAKE ONE QUALITY ONLY.——
Price,
2 oz., 45c.; 4 oz., 75c.; 8 oz., $1.35; 16 oz., $2.50
B. KEITH & CO.,
75 William Street, N. Y.

ON THE USE OF PURGATIVES.

BY CHARLES A. HOFF, M. D., ST. LOUIS, MO.

Of all preparations contained within the *pharmacopœia,* there are none, apparently, held in higher esteem by mankind than that class of medicines, commonly known as purgatives. The busy practitioner confidently prescribes them with variable frequency, singly and combined, from the date of the writing of his very first prescription to that of his last; and the corner druggist rarely sees a day pass over his head on which he does not greet the customer who has called around to get "something to act upon his bowels." Indeed, the inevitable purgative awaits the tiny baby screaming in its first attack of colic; it is resorted to by the invalid weighted down with years of suffering and disease; and it is by no means despised by the individual in robust health, when assailed by the various petty ills, which even the most vigorous seldom entirely escape.

Notwithstanding the fact that purgatives are so generally prescribed by the physician, and so frequently resorted to without advice by the patient, they are not altogether incapable of doing harm. As everybody knows, the habit of purging the system repeatedly with salines, cholagogues, hydragogues, or drastics, is a most pernicious one; and the physician who fails to exercise a proper care, both in the selection and the administration of cathartics will sooner or later bankrupt the health of his patients as well as his own hard earned reputation.

Constipation is a complication of so many disorders, a symptom of so many diseases that its treatment in different cases depends upon very different considerations. For a simple, ordinary attack, the average doctor has been accustomed to use a simple purge, such as castor oil, sulphate of magnesia, rhubarb, senna, aloes, colocynth, blue pills, etc.; yet in none of these, can it be truly said, has there been found all that could be wished for, even in so simple a matter as a laxative. Where can we find the physician who has not been vexed and annoyed at the complaints of his patients against the purgative medicines he has been accustomed to prescribe. Some people there are who can not or will not swallow pills; many object to the nauseating castor oil; not a few oppose the use of salines since they are disagreeable both in taste and effect; many look upon all resinous cathartics as objectionable on account of their so called heating properties; aloes is objected to in pills and especially in pregnancy; elaterium is said to be excessively harsh and severe, croton oil is known to be dangerous; podophyllin causes an undue amount of griping; blue mass is avoided on general principles; and so on to the end of the chapter.

Fortunately, however, the physician of the present need no longer be placed in a dilemma when called upon to prescribe a preparation free from the faults enumerated in connection with ordinary purgatives. The pharmacist has bravely come to his aid with a formula of incomparable excellence; and this preparation, a combination of "manna, purified cathartic acid and fruit juice," although but recently brought to the notice of the medical world, is, nevertheless, already regarded as a most valuable addition to the resources of medicine.

The happy thought that suggested the combination known as the Rio Chemical Co.'s Acid Mannate justly challenges unlimited admiration and esteem, and has thus far evoked from the profession an almost universal verdict of commendation and praise. Prompt, mild and certain in its action, Acid Mannate may well be considered an ideal remedy in the constipation of pregnancy. Being pleasant to the taste, and continuing its good work without increased dosage, it is pre-eminently adapted to cases of habitual constipation. Indeed, in its wide range of adaptability as an aperient medicine it is impossible to exaggerate its importance, or allude either directly or indirectly to the vast variety of its beneficial, therapeutical properties.

The importance of laxatives is probably nowhere appreciated so much as in the constipation of pregnancy; and it is to this fact, no doubt, more than to any other, that Acid Mannate owes its great popularity and fame among remedial agents. The testimony of thousands of honorable medical gentlemen leading us to believe that, through the beneficent effect of this same elegant formula, constipation need not hereafter, as in the past, be regarded as one of the most troublesome attendants upon gestation. Moreover, the atrocious female pill of unknown composition but of dire effect, which has deluged the drug market for ages, we may consider as having had its day; and it is to be hoped that, since the physician is now in possession of a purgative especially suited to the period of gestation, female life will be less frequently harassed by the ails and aches said to be peculiar to the sex; and that miscarriages, displacements, granular erosions, congestions, headaches, dyspeptic and hypochondriacal attacks, and the whole long train of aches, pains and nervous ills will grow less familiar to the medical profession in the same ratio that the physician increases his familiarity with the actions of Acid Mannate.

A full sized bottle of Acid Mannate will be sent free to any Physician who desires to test it, if he will pay the express charges and mention this Journal, on application to the

Rio Chemical Co.,
St. Louis, Mo

ESTABLISHED 1823.

ALEX. YOUNG CO., Limited,

DISTILLERS OF

Y. P. M. WHISKIES.

DISTILLERY, - - - Nos. 408, 410, 412 and 414 South Street.
MALT HOUSE, - Nos. 416, 418, 420, 422 and 424 South Street.
STORE, - - - - - - - - - - No. 700 Passyunk Avenue.

PHILADELPHIA, PA.

New York Office, - 78 Wall Street.

FOR SALE BY

PARK & TILFORD, and ACKER, MERRALL & CONDIT.

THE LABORATORY.

To Inventors, Manufacturers and Applicants for Patents

The AMERICAN ANALYST may be consulted upon all matters involving theoretical or applied chemistry. Advice and opinions given. Analyses and assays made. Patents perfected and secured. Terms reasonable.

Address, AMERICAN ANALYST,
19 Park Place, N. Y.

A SET BACK TO ALL PREVIOUS INVENTION.

EDUCATION Quick vs. Old System **Dead.** Education almost by machine process. As mind is above matter so is this method (simply by seven words) above all previous invention of whatever kind. **A Wherewithal Book, $1.00 Form.**

We **guarantee** you will be more than **satisfied.**

If you want this method remit $1 00 by Registered Letter or send Check and receive by mail a great **possibility** from the sole originators and proprietors of the **New Education,**

WHEREWITHAL COMPANY Philadelphia, Pa.

Ask Grocers for our Patent Barley **CRYSTALS,** a new, **unrivalled Cereal Food,** for Breakfast Tea & Dessert. If not sold there, write us for free samples. **GLUTEN FLOUR** and **SPECIAL DIABETIC FOOD** are invaluable waste-repairing flours for **Dyspepsia, Diabetes, Debility & Children's Food.** No bran; mainly free from starch. For all family uses nothing equals our **HEALTH FLOUR.** Send for circular offering 4 lbs. free.
FARWELL & RHINES, Props., Watertown, N.Y

A BUSINESS BENEFIT.

ADVANTAGES TO ADVERTISERS OFFERED BY THE AMERICAN ANALYST.

It has not the limitations of a daily paper. No one reads yesterday's paper. A monthly lives at least a month, while a semi-monthly is fresh twice a month, and its audience is not limited by geographical lines, but the circulation is all over the United States and Canada.

It contains matters of interest to everyone, especially the ladies of the household, and is, therefore, sure of a careful perusal. Our audiences are intelligent and of the better classes, who have money to spend, and any well worded advertisement in our columns, giving real information, will receive a careful perusal.

Our rates are as low as our circulation affords. Large circulation and original matter cost money, and those advertisers who desire to realize these benefits must expect to pay reasonably for them.

Advertisements in our columns are permanent. Most of our subscribers bind their numbers.

Our advertisements are set up in an attractive form, sure to call the attention of the reader.

Anything that our readers want, or for which a demand is to be created, not wholly of a local nature, will pay to advertise with us.

We take only advertisements from legitimate houses of really meritorious goods, and give them all the editorial assistance they deserve; consequently our readers knowing this, have confidence in advertisements contained in our columns.

The fact that we have the best and largest houses in every branch of trade advertising with us, and that they always renew as their seasons arrive, proves beyond a doubt that they have found the AMERICAN ANALYST a good advertising medium. Why should not you?

GOLD You can live at home and make more money at work for us than at anything else in the world. Either sex; all ages. Costly outfit FREE. Terms FREE. Address, TRUE & Co., Augusta, Maine.

BOVININE, BUSH'S FLUID FOOD,

Is the ORIGINAL and ONLY preparation of RAW FOOD that does not become putrid and disgusting in a short time.

A MOST WONDERFUL NUTRIENT.

The vital principles of Beef and Mutton concentrated. A highly condensed Raw Food Extract. Acceptable to the most delicate taste and smell. Retained by delicate stomachs that reject all other foods. It assimilates more readily than any other food known to the medical profession. Bovinine under the microscope shows the blood corpuscles in their normal condition strongly marked, while in other foods or extracts this vitally important element is destroyed by the action of heat in cooking.

Containing 26.58 Per Cent. of Soluble Albuminoids,

According to OSCAR OLDBERG, Ph.D., Professor of Chemistry and Toxicology, and Dean of the North-Western College of Pharmacy.

A. L. LOOMIS, M. D., Professor in Medical Department of University of New York, says: "I prescribe Bush's Fluid Food or BOVININE, and prefer it to similar preparations."

J. S. JEWELL, M. D., Chicago, says of Bovinine: "I am delighted with it; it is what I have been looking for these twenty years, and it supplies a want that nothing else has been able to fill."

DRS. WARD and FRED. SMITH, speaking for themselves and their colleagues of the Hospital of St. Barnabas, Newark, say: "Bovinine was readily taken by the patients, was easily retained, and in many cases by stomachs which had rejected all other forms of nourishment. We believe Bovinine contains more nutriment, relative to the bulk, than any other preparation known to the medical profession."

"During the last four months of his sickness, the principal food of my father, General Grant, was Bovinine and Milk; and it was the use of this incomparable food alone that enabled him to finish the second volume of his personal memoirs.—FRED. D. GRANT."

October 1st, 1885.

Carefully prepared from the formula of the late James P. Bush, by the J. P. Bush Manufacturing Co., 44 Third Avenue, Chicago, Ill.

PUT UP IN 6 AND 12 OUNCE SIZES, AT 60c. AND $1.00 PER BOTTLE.

For Sale by all Druggists.

Principal Office, 2 BARCLAY STREET, NEW YORK CITY.

PEACOCK'S BROMIDES

(SYR: BROM: COMP: PEACOCK)

NERVE SEDATIVE.

Each fluid drachm represents 15 grains of the Combined C. P. Bromides of Potassium, Sodium, Calcium, Ammonium and Lithium.

USES:—EPILEPSY, and all CONGESTIVE, CONVULSIVE, and REFLEX NEUROSES.

This preparation has stood the test of time and experience, and can be relied upon to produce results, which can not be obtained from the use of commercial bromide substitutes.

DOSE:—One to two FLUID drachms, in WATER, three or more times a day.

PEACOCK CHEMICAL CO., St. Louis.



These Goods are "Par Excellence,"

Pure, Healthful and Reliable, warranted to give satisfaction in every particular. For sale by wholesale and retail grocers throughout the United States. VOUWIE BROS., Manufacturers CLEVELAND and CHICAGO.

OPIUM AND LIQUOR HABIT CURED.

WE solicit an investigation of our system and methods, and will gladly send to any one very interesting matter on the OPIUM HABIT DRUNKENNESS and their effects and cure. Physicians specially invited to examine, and if desirous of trying our remedies, liberal arrangements will be made with them.

THE LESLIE E. KEELEY CO., Dwight, Illinois.

ESTERBROOK'S STEEL PENS

Leading Numbers



14,048,128
130, 135,
333, 161.

—For sale by all stationers.—

THE ESTERBROOK STEEL PEN CO., 26 John St., N. Y.
WORKS CAMDEN, N. J.

THE FINEST MADE
COLBURN'S
PHILADELPHIA
MUSTARD
KING OF CONDIMENTS

ESTABLISHED 1841.



THE GREAT AMERICAN STORY PAPER, —THE— ---YANKEE BLADE---



FREE TO SUBSCRIBERS.

This wonderful family story paper is read every week by 400,000 people. It is a large, eight-page paper, every page filled solid full of interesting reading; stories of thrilling interest, adventure, love, the sea, detective tales, fireside stories, etc. Special articles on the Household Department, Ladies' Work, Boys' and Girls' Departments. The famous funny Columns of THE YANKEE BLADE are edited by SAM WALTER FOSS, the celebrated humorist. The circulation is rapidly increasing. Endorsed by the best people as suitable for everybody to read. Its reading matter is pure, and devoid of the slightest tinge of vulgarity. Don't fail to try THE YANKEE BLADE. You will be delighted with it. Comes every week. Our regular subscription price is $2.00 per year. **We offer it to new subscribers for only $1.00 a year, or 50 cents for six months.** We will send it three months for 25 cents. **If you will enclose 6 cts. extra, and mention this paper, we will send you FREE a Half Dozen Japanese Shifu Handkerchiefs** of Mikado paper, fibre silk, nearly half a yard square, in handsome designs, assorted. This is one of the greatest offers ever made by any reliable firm. Send at once. **Sent 2 years for $1.75.** THE YANKEE BLADE is for sale at all newsdealers, for 5c. per copy.

One Subscription to THE YANKEE BLADE, $1.00, Free for Every Club of Four New Subscribers, And $4. TRIAL, ONE YEAR.

POTTER & POTTER, Pubs. Yankee Blade, Boston, Mass.

We have examined the above-named paper and Japanese handkerchiefs, and find them to be a remarkable bargain. We can recommend them to all our readers.—Editor.

FOR THE ILL-EFFECTS —OF— Summer Heat, Heat Exhaustion.

Where after a prolonged exposure to a heated atmosphere you feel exhausted, depressed and tired mentally as well as physically, take a dessert spoonful of Bromo-Soda in half a glass of water, and drink while effervescing, when relief will be sure to follow.



A Cure for Sick Headache, Sleeplessness, Etc.

ASK FOR BROMO-SODA and TAKE NO SUBSTITUTE.

SWIFT'S

Choice Chicago Dressed Beef

—AND—

MUTTON.

CAN be found at all times in full supply and at popular prices at the branch houses in all the larger cities and is ***retailed by all first class butchers.***

The trade of all marketmen and meat dealers is solicited for our Wholesale Branch Houses, and the ***public may rest assured*** *that in* ***purchasing our meat*** *from dealers they will* ***always receive the best.***

SWIFT AND COMPANY,

UNION STOCK YARDS,

CHICAGO, ILLS.

Tabasco Pepper Sauce

OR LIQUID PEPPER.

Is simply the Pulp of the Ripe Pepper Extracted by Pressure.

The seed of this Pepper was obtained from Central America, and by careful cultivation in Louisiana for many years has been so improved in strength, flavor and aroma, as to have become a new variety of Red Pepper, superior to all others. The pulp is so handled as to retain all the flavor, strength, aroma and color of the ripe fruit, and to keep unimpaired in any climate. It excites the appetite, promotes digestion, and is pronounced, by connoisseurs, to be the finest condiment in the world. For medicinal purposes it recommends itself by its purity, strength and diffusible form.

Manufactured by E. McILHENNY,

NEW IBERIA, LA.

For Sale by all Wholesale Grocers.

CARNRICK'S SOLUBLE FOOD

IS UNLIKE ANY OTHER INFANT'S FOOD THAT HAS EVER BEEN PRODUCED.

℞

THE FORMULA.

Partially Predigested Milk Solids,	**45 parts.**
Wheat with the Starch converted into Dextrin,	**45 "**
Milk Sugar,	**10 "**

We do not claim this food to be "a **perfect** substitute for human milk." But we do claim that **Carnrick's Food approaches nearer to human milk in constituents and digestibility than any other food that has ever been produced**, and that it is the only infant's food that will, without the addition of cow's milk, thoroughly nurse a child from its birth.

We believe that **Carnrick's Food** solves the problem of a reliable substitute for human milk. The Caseine of cows' milk, by partial predigestion with freshly made Pancreatine, is rendered as easily digestible by the infant as human milk.

We have never published an analysis of **Carnrick's Food** "prepared with milk," for, unlike all other foods, it is prepared by the addition of water only, and we base our claim upon the intrinsic value of the food as compared with an equal amount of solid constituents of human milk. All other analyses or comparisons are misleading. We challenge similar comparisons with any other food, and confidently believe, that if **Carnrick's Food** is depended upon for the nutrition of infants, the great mortality among children will be reduced. Full information regarding the process of manufacture will be cheerfully furnished, and samples sent free to those who wish to test **Carnrick's Food.**

REED & CARNRICK, New York.

GORDON & DILWORTH

MANUFACTURING PURVEYORS

Established 1847

ALIMENTARY PRODUCTS

ALL OF OUR PRODUCTIONS BEAR THIS TRADE MARK

WE WILL PROSECUTE ALL INFRINGEMENTS & IMITATIONS



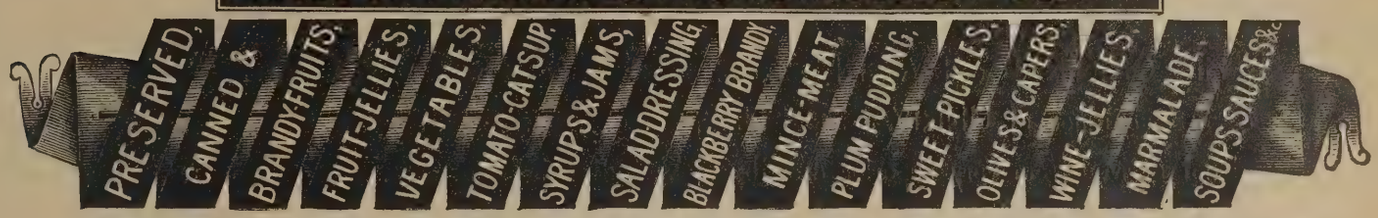




CHOICE DESSERTS

OF RIPE DOMESTIC & FOREIGN FRUITS AND VEGETABLES TRANSMUTED INTO TABLE DELICACIES

PRICES ON PRESERVED FRUITS REDUCED 1ST DEC. 1885



SOLD BY THE LEADING GROCERS ON THE AMERICAN CONTINENT.

GRAND NATIONAL PRIZE OF 16,600 FRANCS.

QUINA-LAROCHE

VINOUS ELIXIR,

A STIMULATING RESTORATIVE

AND

ANTI-FEBRILE TONIC.

This meritorious ELIXIR, QUINA-LAROCHE, is prepared from the **three** Cinchonas; it is an agreeable and doubtless highly efficacious remedy.—*The Lancet.*

QUINA-LAROCHE, under the form of a vinous Elixir, contains the totality of the numerous principles of the **three** Cinchona barks. It is a preparation which renders great services to Therapeutics.—Extract of the *Gazette des Hôpitaux*, Paris.

Far superior to all Ordinary Cinchona Wines.

LAROCHE'S QUINA, tried by the Academy of Medicine of Paris, is a specially prepared COMPOUND EXTRACT of Quinquina, a careful analysis, confirmed by experience, has shown that most of the wines and syrups hitherto used have not contained all the properties of this precious bark, of these some, although beneficial, are altogether lost, while many preparations contain but half the properties of the bark in varying proportions.

MR. LAROCHE, by his peculiar method, has succeeded in extracting all the active principles of the quinquina, combining these with *Catalan Wine,* forming an Elixir free from the disagreeable bitterness of other similar preparations. Practitioners have found triple advantages in the use of this Elixir; it is a *strong tonic,* is easily administered, and perfectly harmless, being free from the unpleasant effects of Quinine.

THE FERRUGINOUS QUINA-LAROCHE is the invigorating tonic *par excellence,* having the advantage of being easily assimilated by the gastric juice, without, in any way, deranging the action of the digestive organs, proving itself to be a most efficacious remedy in cases of impoverishment of the blood, **Anæmia, Chlorosis, Intestinal Hemorrhage, Castralgia, Exhaustion,** etc., etc.

PARIS.—22 RUE DROUOT.—PARIS.

Laroche

E. FOUGERA & CO., New York, Sole Agents for the United States.



IMPERIAL GRANUM

THE GREAT MEDICINAL FOOD

THIS ORIGINAL and WORLD RENOWNED DIETETIC PREPARATION is a Substance of UNRIVALED PURITY and MEDICINAL WORTH. A solid extract derived from very superior growths of Wheat—nothing more.

It has justly acquired the reputation of being

THE STANDARD DIETETIC PREPARATION.

And has been recommended and certified to by a large number of Chemists and Physicians, representing a very high degree of medical science as

THE SALVATOR FOR INVALIDS AND THE AGED,

A SUPERIOR NUTRITIVE IN CONTINUED FEVERS,

A RELIABLE REMEDIAL AGENT IN ALL DISEASES OF THE STOMACH AND INTESTINES, (often in instances of consultation over patients whose digestive organs were reduced to such a low and sensitive condition that the Granum was the only thing the stomach would tolerate when life seemed depending on its retention), and, AN INCOMPARABLE ALIMENT FOR THE GROWTH AND PROTECTION OF INFANTS AND CHILDREN. We do not hesitate, however, in saying that no food for the nursling can at all compare with a healthy mother's yield of milk; but when the breast fails to give sufficient quantity of nourishment, or the mother's milk is lacking in nutritive substance—the IMPERIAL GRANUM is, as has been proved in thousands of cases,

THE SAFEST FOOD.

Unlike those preparations made from animal or vinous matter, which are liable to stimulate the brain and irritate the digestive organs, it embraces in its elementary composition THAT WHICH MAKES STRONG BONE AND MUSCLE, THAT WHICH MAKES GOOD FLESH AND BLOOD, THAT WHICH IS EASY OF DIGESTION, NEVER CONSTIPATING, THAT WHICH IS KIND AND FRIENDLY TO THE BRAIN, and THAT WHICH ACTS AS A PREVENTIVE OF THOSE INTESTINAL DISORDERS INCIDENTAL TO CHILDHOOD. And while it would be difficult to conceive of anything in food or dessert more creamy and delicious, or more nourishing and strengthening as an aliment in

FEVERS, PULMONARY COMPLAINTS, GASTRITIS, DYSPEPSIA and GENERAL DEBILITY,

its rare medicinal excellence in all intestinal diseases, especially in

CHOLERA, DYSENTERY, CHRONIC DIARRHŒA and CHOLERA INFANTUM

HAS BEEN INCONTESTABLY PROVEN.

Sold by Druggists. **JOHN CARLE & SONS, New York.**

ARMOUR & CO.

CHICAGO, ILLS.

PACKERS OF

Pork and Beef Products

CANNED MEATS,

ETC.,

FOR HOME CONSUMPTION AND FOR EXPORT

TO ALL PARTS OF THE WORLD.

Also,

SHIPPERS OF

Choice Dressed Beef,

MUTTON AND HOGS,

In Refrigerator Cars,

To BOSTON,
NEW YORK,
PHILADELPHIA,
BALTIMORE,

And other cities throughout the country.

GREENWAY'S PORTER

—AND—

DOUBLE AND EXTRA DOUBLE STOUT.

GREENWAY'S ALE.
INDIA PALE
IN GLASS OR WOOD
AMERICAN
TRADE MARK.
FULLY EQUAL TO THE BEST IMPORTED.
FOR FAMILY OR CLUB USE.
RECOMMENDED BY OUR BEST PHYSICIANS
FOR SALE BY ALL FIRST CLASS GROCERS AND DEALERS.
SEND FOR CIRCULARS.
THE GREENWAY BREWING CO.
SYRACUSE, N.Y.

Greenway Bottling Co..

BOTTLERS OF

GREENWAY BREWING CO'S BRANDS OF ALE, PORTER, DOUBLE STOUT

—AND—

Germania Brewing Co's Standard Pale Crown Lager & Culmbacher.

N. Y. Depot, 31 Broadway.

Established in London, 1831.

DEAN'S PATENT

ARDENTER MUSTARD.

BEST IN THE WORLD.

WARRANTED ABSOLUTELY PURE.

WARRANTED ABSOLUTELY PURE.

Ardenter Mustard Pellets

—FOR—

Dyspepsia and Indigestion.

UNIVERSALLY recommended and prescribed by physicians. The medicinal property are English mustard seed coated with pepsin and sugar. You will find it will relieve you after using two or three doses. It is very beneficial for Heartburn, Sour Stomach and Headache. They are a beautiful confection for children. Each bottle contains full directions.

W. G. DEAN & SON,

361 and 363 Washington Street, 84, 86 and 88 North Moore Street, New York.

—THE—

CHRISTIAN MOERLEIN

Brewing Co.,

CINCINNATI, U. S. A.,

Brewers of the far-famed

"NATIONAL" EXPORT

(The Queen of Beers)

LAGER.

Owing to its absolute purity, beautiful pale color, fine aroma and nutritious qualities, the above beer has become the PRIME FAVORITE in all the principal hotels and clubs, and in thousands of families throughout the West and South.

Pure LAGER BEER,

"IMPERIAL" and "CULMBACHER"

Brewed & Bottled SPECIALLY FOR HOTELS, CLUBS AND PRIVATE FAMILIES

—BY—

Beadleston & Woerz
291 W. 10th St. New York.

Orders by Postal Card promptly attended to.

H. CLAUSEN & SON

BREWING CO'S

CHAMPAGNE LAGER BEER,

ROYAL EXPORT LAGER,

EAST INDIA PALE ALE,

EXTRA AMERICAN STOUT.

Bottled for Family Use and Export by

PHŒNIX BOTTLING CO.

888 and 890 Second Avenue,

Bet. 47th and 48th Streets.

NEW YORK.

Order from your Grocer, or direct from us.



Its superior excellence proven in millions of homes for more than a quarter of a century. It is used by the United States Government. Endorsed by the heads of the Great Universities as the Strongest, Purest, and most Healthful. Dr. Price's Cream Baking Powder does not contain Ammonia, Lime or Alum. Sold only in cans.

PRICE BAKING POWDER CO.
NEW YORK. CHICAGO, ST. LOUIS.

STERLING



BAKING POWDER

MADE FROM
99 50/100 PURE CREAM TARTAR.

This powder never varies. A marvel of purity, strength and wholesomeness. More economical than the ordinary kinds. SOLD ONLY IN CANS.

STERLING MANU'F'G CO.,
12 & 14 Spruce St., New York.

SEE

THIS SPACE

NEXT ISSUE.

MANUFACTURED BY THE



N. K. FAIRBANK & CO'S

FAIRY SOAP.

A PERFECTLY PURE WHITE FLOATING SOAP.

DESIGNED EXPRESSLY TO USE IN TOILET, BATH AND NURSERY.

Admirably adapted to every requirement of the Household.

DAINTY AND DELICATE FOR ALL WASHING PURPOSES

For sale by all First-class Grocers and Druggists.

N. K. FAIRBANK & CO.,

CHICAGO, ST. LOUIS, NEW YORK, OMAHA.

ESTABLISHED 1872.

GELATINE.

JAMES CHALMER'S SON'S

Transparent Gelatine.

PURITY—STRENGTH.

Best for Family Use.
Jellies, Blanc Mange, Etc.

ACKNOWLEDGED BY EVERY ONE EQUAL TO THE BEST.

Good Agents

To obtain Subscriptions for

AMERICAN * ANALYST

WANTED ON LIBERAL TERMS.

RUBY ROYAL "SEC."

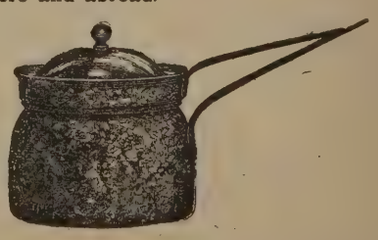


This wine, of a bright crimson or Ruby color, possesses exceptional merit in all the characteristics of dryness, mellowness of flavor, and delicacy of fragrance. It is the only red champagne in the market, and can be tried at the Hoffman House, Delmonico's and other first-class places.

Sold by the Leading Grocers.

AGATE IRON WARE

Is the Purest, Cleanest, Most Durable, and altogether the Best Ware for family use ever made. It will not rust or break like ordinary Enamels, and is absolutely pure and safe to use, as certified to by the most eminent chemists here and abroad.



Two thousand different styles and sizes of Agate cooking utensils, for family use, are sold by all first-class dealers throughout the world, and giving universal satisfaction.

EXPERIMENT STA

AMERICAN ANALYST

FOR THE

FAMILY AND CONSUMER.

A SEMI-MONTHLY ADVOCATE OF PURE FOOD AND THE SUPPRESSION OF ADULTERATION.

Office, 19 Park Place.

[Entered at the Post Office at New York, as Second Class Matter.]

VOL. IV.—No. 19. NEW YORK, OCTOBER 1, 1888. Whole No. 91

CONTENTS.

A Powerful Food Ally 399
A Useful Book 400
Answers to Correspondents 398
Biter Bitten 397
Contagious Diseases and Epidemics 398
Diseased Meat 400
Domestic Dietetics 400
Editorial 398
Germanizing Wines; Sophisticated Sugar; Chicago *vs.* City Dressed Beef; A Splendid Example.
French Dishes—(*Continued*) 396
French Mustard 397
Hair, How to Preserve 399
Pure Lard Question 397
The Buried Bungalow. Complete Story 393
Warming the House—(*Continued*) 394
Woman's Crown 399

THE BURIED BUNGALOW.

"What can this mean?" asked I, reining up my horse close to the dense milkthorn hedge that shut in Mr. Warren's pretty house, and its garden, gay with flowers, from the tea plantations, the green valley, the upland pastures, and the dazzling peaks of the Himalayas soaring overhead. There, on a fragment of rock, stood the well-known tal form of the planter himself, angrily confronting a motley mob of natives—some tawny, some yellow-skinned, and a few nearly black. These, although they had flung aside hoe and spade, I knew to be the coolies employed at the prosperous hill-station, where such a scene of confusion had been hitherto unknown.

"The scoundrels are going to leave me—that's all!" said Mr. Warren, curtly. And at that instant there stepped forward in advance of the rest a gaunt Tibetan, clad in sheepskins, who, ceremoniously and with perfect gravity, placed on the ground a fragment of wheaten cake, a handful of salt and a *lota*, or brass drinking cup, nearly filled with coins, from silver rupees to copper pice. Then, pointing with a peeled willow wand that he held in his hand to the food and the money thrice, he snapped in twain the slender stick, and with bent head and downcast mien stood motionless, as though waiting to be questioned.

"What mummery is this?" asked I, in an undertone. My intended father-in-law, who knew the people and the country better than I did, shook his head.

"It means mischief," he whispered. "Something has terrified the superstitious curs; and see! they renounce my bread and salt, return the advance of wages, and break the wand, in token that they are my men no more. You mean," he added, harshly, in the Bengali dialect, "to desert me, then, Han Gorain!"

"The Sahib Warren is a good master," replied the Tibetan, in the same language. "If we go, it is because the evil eye has looked upon his threshold, and the voice that never lies has laid a curse on Yirmi Sou and all that dwell there."

The man spoke slowly and with some difficulty, such as besets those who use a foreign tongue imperfectly mastered; but he had uttered his brief speech with emphasis, and with a certain dignity of bearing. Behind him stood the Tibetans and hill men—sturdy fellows, on whom devolved the rough work of trenching and dyke-building, while a little way off clustered the dusky coolies from India proper, their lips tightened over their shining teeth, and in attitudes expressive of the most abject servility. Clearly there was no stimulus short of physical fear which would have nerved these crouching creatures to disobey the Burra Sahib, or owner of the plantation, whose lightest word had been law to his meek subordinates.

"If the Sahib will hearken to the counsel of the poor," said the spokesman, after a pause, "he and his will hasten away, before——"

But here Mr. Warren lost patience, and interrupted the orator, roundly rebuking the whole gang as a pack of craven hounds, frightened at their own shadows, and without a spark of manliness to redeem them. Were it worth while, he said, he could gallop over to the nearest magistrate and enforce the performance of the contract under pain of flogging and imprisonment, but he wanted no half-hearts in his service, so they might go. "You hear me!" he thundered, silencing Han Gorains' fresh effort to speak; and the men slunk away, cowed, as Orientals usually are, by this undoubting assertion of authority.

The planter recovered his temper as soon as the recusants had departed, and laid his broad hand on my shoulder, saying, with a jolly laugh, "A lesson, George, my boy, as to the thorns that will lie in your path when you and Edith live here in my stead, as I hope you'll do, after the gathering in of the next tea crop, and set-to to feather your nest, as her mother and I have done. I thought better things, too, of the overseer—that Han Gorain, who, before some heathen bogie scared him was a shrewd and reliable servant. But never mind! Come in, Musgrave, come in! The parson from Nynee Tal is here already, and you must help the bride expectant to entertain him until dinner time."

Pretty Edith, who was on the morrow to become my wife, smiled away any uncomfortable feelings which the conduct of Han Gorain and his companions had left behind; and neither she nor her parents, nor Mr. Edwards, the clergyman—who had come over expressly to perform the marriage ceremony—seemed to attach any importance to the panic among the coolies.

"It was something," explained Mr. Warren, "about Alp Dagh, the Big Mountain, at the foot of which we live; but I have been a planter here too long to care for the tattle of coolies. They are like children who talk of the nursery ghost until they see it in every dark corner. A delightful life I should have led here had I been credulous."

And with that he dismissed the subject, and the evening passed genially enough. Later on, however, after the whispered farewell to my sweet Edith in the porch, draped with the glistening leaves and big white blossoms of the Indian creeper, after the ride home to my own dwelling among the hills, and when my head rested on its pillow, a vague sense of insecurity beset me afresh; and even when I fell asleep my dreams were troubled and sad, not such as should visit the slumbers of one on whom the world smiled as it did on me, George Musgrave. The dawning of the new day—my wedding day—however, chased away the clouds from my mind, and when I mounted my horse to ride to Yirmi Sou, attired as a bridegroom should be, my heart was light and full of happy hope. Edith loved me better than I deserved—I knew that; and it was her father's intention to establish the young couple on his own fine plantation, while he and Mrs. Warren returned to England to enjoy their well-earned competency.

The day was fine—no rarity in the East—but a sort of silvery haze hung over the peaks northwards, and there were frequent gusts of ice-cold wind rushing down from gap and pass in the rocky range that forms the boundary of India. I rode on, and presently, from an angle in the mountain road, I caught a glimpse of the "Twenty Springs," as Mr. Warren's thriving station was called, with its gardens and meadows, and the now deserted plantation, and the empty huts of the coolies. Then I turned the corner and saw it no more; but even as it vanished from my eyes I heard a strange deep sound like that of distant thunder, the nature of which I could not divine. My horse suddenly snorted and reared, and then stood trembling, and could scarcely be urged forward. While I was in the act of stooping forward to pat the Arab's glossy neck, speaking soothingly to him the while, there broke upon my ear a sullen roar—louder, nearer, at each instant, and culminating in a crash so dreadful that the simultaneous discharge of a thousand cannons would have seemed puny when compared with it.

Deafened, dizzy, and confused, I dismounted from my frightened horse, now wholly unmanageable, and hurried on foot to a spot whence, as I remembered, Edith's home was in sight. The air was thick with dust and withered leaves; but as the prospect grew clearer I could see no trace of the bungalow, of its homestead and gardens, or of the thriving tea plantations and verdant meadows around it. Vainly did I strain my eyes to catch one well-known feature of the familiar scene. Nothing was visible save a dreary waste of stones, mud, and rocks filling up half the valley, and above which hung a cloud of tawny dust that was slowly subsiding.

As I stood stupidly gazing on the scene of ruin, I caught sight of a man, bareheaded, and with a white sacred face. I knew him. It was the young clergyman who had come over from Nynee Tal to perform the marriage ceremony between Edith and me.

"Mr. Edwards?" I said inquiringly, as I neared him.

He caught my hand, covered his face, and burst into tears. Then for the first time I realized what fear was.

LACTOPEPTINE.

The most important remedial agent ever presented to the Profession for Dyspepsia, Vomiting in Pregnancy, Cholera Infantum, Constipation, and all Diseases arising from imperfect nutrition.

Lactopeptine precisely represents in composition the natural digestive juices of the Stomach, Pancreas and Salivary Glands, and will, therefore, readily dissolve all foods necessary to the recuperation of the human organism.

CAUTION

We regret that we are compelled to caution the profession in prescribing Lactopeptine, but very careful investigation has proven to us clearly the necessity of it. Substitution of cheap and worthless compounds are being made in many cases where Lactopeptine is prescribed.

Lactopeptine is always UNIFORM, and its effects are SPECIFIC, and no one has ever been able to imitate its digestive value. If you do not obtain positive results when you prescribe Lactopeptine, you can be sure that some substitution has been made, and in such cases it may be necessary for the physician to prescribe Lactopeptine in the original ounce package to insure certainty of obtaining the genuine article. We can confidently make this assertion, knowing the scrupulous uniformity in digestive value of every ounce of Lactopeptine.

Lactopeptine has always been kept strictly in the hands of the Medical Profession, never having been admitted in any publications but Medical Journals. It is prescribed by the most intelligent and educated physicians in all parts of the world, and there are but few physicians who have ever used Lactopeptine that will not agree with the late Prof. L. P. Yandell, when he says: "Lactopeptine is one of the certainties in medicine, and in this respect ranks with Quinine."

In the various forms of Dyspepsia, in vomiting in Pregnancy, and in Mal-nutrition of children, there is no known remedy so positive in results.

P. O. Box 1574. THE NEW YORK PHARMACAL ASSOCIATION, NEW YORK.

"For pity's sake, tell me all!" cried I, hoarsely. "Is Miss Warren—is Edith safe? What has———"

"Of all beneath that roof—the roof of Mr. Warren's hospitable house—I alone am spared," answered the clergyman in broken accents. "Death, the grim mower, has garnered in his harvest there."

The cause of the disaster was but too evident. A stone avalanche, or *moraine*, as it is called in Switzerland, had rushed down from the unscaled heights of the huge mountain towering above Yirmi Sou, and had overwhelmed all beneath it.

"I caught a glimpse of Miss Warren in the garden, as the stony flood burst on us with its deafening roar," said the clergyman, as he grew calmer; "it may be that God's mercy has spared her life too."

And indeed I have much to be thankful for; since my dear Edith was found, fainting but unhurt, at the foot of a tall cedar, the only tree left standing, wedged in between fallen rocks. But the other inmates of the house had perished, nor were even their bodies ever extricated from the mighty mausoleum which Nature's own hand had piled above them. Edith and I have been married these five years, but our home is in England, not in India; and sometimes, when I see a shadow come across my wife's fair face, I know that she is thinking of those who sleep below the cruel stones at Yirmi Sou.

MELLIN'S

TRADE MARK.

ORA ET LABORA

FOR INFANTS & INVALIDS

FOOD

The Only Perfect Substitute for Mother's Milk.

A Copy of our Book,

The Care and Feeding of Infants

will be MAILED FREE to any address.

DOLIBER, GOODALE & CO.,

40-41-42-43 Central Wharf, Boston, Mass.

WARMING THE HOUSE.

SOME SCIENTIFIC, ECONOMIC AND PRACTICAL SUGGESTIONS.

(*Continued.*)

Hot water pipes for warming air are free from many of the objections arising from the direct application of heat to iron, because the heat can be regulated with exactness.

A high temperature may be obtained from water without generating steam, by heating it under pressure. In our high pressure system, a continuous iron tube, about one inch diameter, is filled with water; about one-sixth of the length of the tube is coiled and placed in a furnace, and the remainder, forming the heating surface, is heated by the circulation of the water. At the highest level to which the tube is carried it is enlarged so as to allow a space for expansion of the heated water equal to 5 per cent. of the contents of the small tube.

Pipes may be heated by either hot water or by steam. The higher the temperature, the greater is the comparative effect in warming air. Therefore, with a small heating surface steam pipes are more efficient than hot

STEVENSVILLE MILLS.

IMPEROYAL VACUUM COOKED OATS.

IMPEROYAL VACUUM COOKED WHEAT.

M. D. STEVENS'

SOLE MANUFACTURER OF

ABSOLUTE PURITY.



HOUSEHOLD NECESSITY.

ONE MINUTE IN PREPATATION.

IMPEROYAL VACUUM COOKED HOMINY.

IMPEROYAL GRIDDLE CAKE FLOUR.

Recommended by Eminent Physicians and Chemists.

☞Adapted to all kinds of Pastry, Bread, Biscuit, Griddle Cakes, etc., and its absolute purity and freedom from Alum, Terra Alba or any injurious ingredient, makes it a necessity in every household. No lady can afford to be without it. Sold by best Grocers.

M. D. STEVENS,

Room 18, Mercantile Exchange,

Cor. Hudson & Harrison Sts., NEW YORK.

BAGINSKY—EARLE.

In a paper read by CHARLES WARRINGTON EARLE, M.D., at the 39th meeting of the Am. Med. Ass'n, Dr. EARLE quoted BAGINSKY, the latest German author on Kinderkrankheiten as a leading advanced man on the subject of infant feeding. We select for readers of this advertisement one brief, *pithy sentence from Baginsky*, as quoted by Dr. EARLE, as follows:

"NESTLÉ'S FOOD IS SPOKEN OF AS BEING

THE BEST TYPE OF A PREPARED FOOD."

Testimony of this kind crops up every month in the writings of leading men all over the world. We must caution the profession against imitations of NESTLÉ'S FOOD, under the name of milk food. Samples sent on application to

THOS. LEEMING & CO., NEW YORK.

F. W. DEVOE & CO.,

ESTABLISHED 1852.

PURE MIXED PAINTS

WE desire to call attention of consumers to the fact that we guarantee our ready-mixed paints to be made only of pure linseed oil and the most permanent pigments. They are not "Chemical," "Rubber," "Patent," or "Fireproof." We use no secret or patent method in manufacturing them by which benzine and water are made to serve the purpose of pure linseed oil. Sample cards containing 50 desirable shades, sent on application.

Catalogues of our different departments to responsible parties.

FINE VARNISHES, WOOD FILLERS, WOOD STAINS.

Artist's Materials. Mathematical Instruments.

Cor. Fulton and William Sts., New York.

COFFIN, DEVOE & CO.,

179 RANDOLPH STREET, CHICAGO.

IMPORTANT

TO THE

MEDICAL PROFESSION.

Send your address to THE NEW YORK PHARMACEUTICAL COMPANY, BEDFORD SPRINGS, MASS., for Illustrative Hand-book, **FREE**, containing valuable formula, special directions, and the testimonials of one thousand physicians in favor of the great merits of

HAYDEN'S

Viburnum Compound,

IN FEMALE DISEASES.

Also, the

URIC SOLVENT,

For KIDNEY DISEASES, and complaints arising therefrom.

"OUR TWIN COMFORTS."

Two Essentials for Sound and Beautiful Teeth,



A Perfect Polisher & Thorough Cleanser

More cleanly than bristles and avoids the irritation to the **Gums**, and injury to the **Enamel**, so frequent from their use.



Conveniently Supplies the Quill and Dental Floss Indispensable for Use After Eating to Prevent Decay. Each Toothpick contains one yard Spool of Floss.

Dr. E. T. Darby of the University of Pa., Philadelphia, writes: "The two, if faithfully used, will do more toward saving the teeth than all the Tooth Brushes in America."

AT ALL DRUGGISTS.

HORSEY M'F'G CO., Utica, N. Y.

water pipes, and steam at a high pressure more efficient than low pressure steam. The efficient action of hot water pipes depends upon the upward flow of the heated and expanded water as it passes from the boiler, the passage being made as direct as possible, and so protected as to lose little heat between the boiler and the place where the heat is to be utilized. The return pipe, which brings back the water after it has been cooled down by the abstraction of heat in warming the air, should be passed into the bottom of the boiler as directly and in as uniform a line from the place where the heat has been used as possible. The velocity of flow in the pipes will depend upon the temperature at which the water leaves the boiler, the height to which the heated water has to rise and the temperature at which it passes down the return pipe back into the boiler. The efficiency of a hot water apparatus will be regulated by these conditions, by the size of the pipe, and by such other conditions as effect the flow of water in pipes. When the boiler or source of heat is very near the level of the pipes for heating the air, the average temperature which can be obtained in the pipes will be lower than when the vertical column is long. The heating surface must be regulated with reference to this difference of level. It may further be assumed that with small pipes, the temperature being constant, the velocity of flow in the pipe necessary to furnish a given amount of heat will vary in the ratio of the length of the pipe. When the water circulates through the pipes by virtue of the difference of temperature of the flow and return currents only, it is impossible to count upon a greater mean temperature of the pipes than from 160 deg. to 180 deg., because above that temperature the water in the boiler begins to boil. To obtain a sufficient velocity of circulation for long distances, or with small difference of level, a forced circulation may be resorted to. This has been done in the following manner: The whole hot water service is supplied from boilers placed at one end of the building, which extend to a distance of several hundred yards. There are two pipes. One of them, which may be called the flow pipe, is connected directly with the boiler, terminating at the point furthest from the boiler in a dead end; the other, which may be termed the return pipe, is parallel to the first, and terminates at one end in a cistern which is placed about six feet above, and supplies the boiler. At the other end furthest from the cistern the second pipe also terminates in a dead end. At each pavilion or place to which hot water is required to be conveyed, there is a connection between the two pipes which can be closed or opened at will. When it is opened, the water can pass from the flow to the return pipe. In the second, or return pipe, near the point where it ascends to the cistern, is placed a rotatory pump, or fan wheel, which is always kept revolving. When the openings are all closed between the two pipes, this pump or fan simply slips through the water; but as soon as the return pipe obtains a supply of water from any of the openings between it and the flow pipe, a circulation is established.

The amount of heating surface to be afforded with hot water pipes depends mainly upon the volume of air to be admitted and removed, and the temperature desired to be maintained; but in any given building there are other circumstances to be taken into account, viz., the position, aspect, subsoil, temperature of locality, thickness of walls, size and form of windows, and other influences affecting the temperature of the incoming air, or causing loss of heat. An empirical rule has been laid down that, in a dwelling house, one square foot of heating surface is required for every 65 cubic feet of space to be warmed, and in a green-house one square foot to every 24 cubic feet. This empirical rule does not take into account the sanitary considerations as to the renewal of air.

Steam-heated pipes present important advantages in some cases over hot water pipes for heating purposes, because of the higher temperature to which the pipes can be raised, their consequent smaller size, and the facility of conveying the heat to a distance. Steam-heating may be applied directly, and the waste steam from an engine is also applicable for heating.

(To be continued.)

BOAT ELEVATOR.—An elevator for canal boats, as a substitute for five or six locks, is in successful operation at Arques, near St. Omer, France. The boats are lifted to the height of nearly fifty feet by hydraulic pressure, inclosed in a reservoir made of wrought iron plates, and separated from the rest of the canal by iron gates. When the required height has been reached, the gates are opened and the boat is drawn out into the main channel.

The Standard of Excellence.

KINGSFORD'S

OSWEGO

Pure and Silver Gloss



STARCH

KINGSFORD'S

OSWEGO CORN STARCH

FOR

Puddings, Custards, Blanc-Mange, Etc.

THE PERFECTION OF QUALITY.

WILL PLEASE YOU EVERY TIME.

Always ask your Grocer for these goods.

COLDEN'S LIQUID BEEF TONIC.

ORIGINAL LABEL:
"Colden's Liebig's Liquid Extract of Beef and Tonic Invigorator."

AN INVALUABLE AID IN THE TREATMENT OF ALL CASES OF DEBILITY.

Established 15 Years. Endorsed by Scores of Physicians. Essentially Different from all other Beef Tonics. Beware of Imitations.

COLDEN'S LIQUID BEEF TONIC consists of the Extract of Beef (by Baron Liebig's process), spirit rendered non-injurious to the most delicate stomach by extraction of Fusel Oil, soluble Citrate of Iron, Cinchona, Gentian and simple aromatics. An official analysis of this preparation by the eminent chemist ARTHUR HILL HASSALL, M. D., F. R. S., and an endorsement by SIR ERASMUS WILSON, F. R. S., is printed on the label of each bottle.

Its Range of Action Embraces all Cases of Debility.

By the urgent request of several eminent members of the medical profession, I have added to each wineglassful of this preparation two grains of SOLUBLE CITRATE OF IRON, and which is designated on the label as "No. 1," while the same preparation, without Iron, is designated on the label as "No 2."

It acts directly on the sentient gastric nerves, stimulating the follicles to secretion and gives to weakened individuals that first pre-requisite to an improvement, an appetite.

☞ *I will, upon application, send a sample bottle of* ***Colden's Liquid Beef Tonic*** *to any physician in regular standing. Please ask your Dispensing Druggist (if he has not already a supply) to order it. In prescribing this preparation physicians should be particular to mention* ***"COLDEN'S"*** *viz:* ***"EXT. CARNIS. FL. COMP. (COLDEN)."*** *It is put up in pint bottles and can be had of Wholesale and Retail Druggists generally throughout the United States.*

C. N. CRITTENTON, Sole Agent,

115 Fulton Street, N. Y.

Please Mention the AMERICAN ANALYST.

FRENCH DISHES.

THE MEANING OF THE TERMS FOUND ON BILLS-OF-FARE.

[Translated and Explained by the AMERICAN ANALYST.]

(*Continued.*)

[NOTE.—It is not our purpose to furnish a complete dictionary of French words used in cooking and on bills-of-fare, but only to give free translations of those terms most frequently found, the full understanding of which would possibly conduce to the readers' enjoyment of the dinner table. Incidentally, also, some practical hints are given as to the composition of many of the more popular French dishes.]

Côtelettes d'agneau aux petits pois	Lamb cutlets with green peas.
Côtelettes de chevreuil à la chasseur	Venison cutlets with brown sauce.
Côtelettes de mouton	Mutton chops.
Côtelettes de mouton à la marquise	Mutton chops with tomato sauce.
Côtelettes de mouton à la Nelson	Mutton chops and stewed onions.
Côtelettes de perdreaux en papillotes	Partridge drumsticks in paper.
Côtelettes de porc	Pork cutlets.
Côtelettes de porc à la Robert	Pork cutlets with brown sauce and hot pickles.
Côtelettes de veau	Veal cutlet.
Côtelettes de veau au epinards	Veal cutlets with spinach.
Côtes de porc	Spare rib roast.
Crêmes	Creams.
Crépinettes de porc	Small pork sausages.
Crevettes	Shrimps.
Croquette	A fritter or round fried cake like a fishball.
Croquette de poisson	Fish croquette.
Croquettes de pomme de terre	Potato croquettes.
Cuisse de porc bouilli	Boiled fresh ham.
Cuisse de porc bouilli avec pouding de pois secs	Boiled fresh ham with dried peas porridge.
Cuisse de porc rôti	Roast fresh ham.
Cuissot de chevreuil piqué	Leg of venison larded.
Culotte de bœuf	Round of beef.
Dinde ou dindon	Turkey.
Dindon à la Chipolata	Turkey larded with truffles and mushrooms.
" à la Godard	Roast turkey with ragout sauce.
" à la Perigeux	Young turkey with truffles.
" braisé à l'Impériale	Turkey stuffed with mince meat.
Écrevisse	Crabs.
Emincée de chevreuil en vol au vent	Minced venison in patties.
Emincée de mouton aux câpres	Minced mutton with capers.
Entremets	Side-dishes.
Entremets chauds	Hot side-dishes.
Entrecôtes	Ribs of beef.
Entrecôtes grillé à la maître d'hotel	Broiled steak with parsley.
Epaule d'agneau	Roast shoulder of lamb.
Epaule d'agneau aux légumes	Shoulder of lamb with vegetables.
Epaule de mouton	Shoulder of mutton.
Epaule de veau	Shoulder of veal.
Eperlans	Smelts.
Epigrammes de lièvre sauce tomates	Hare tenderloin with tomato sauce.
Epinards	Spinach.
Escalopes de chevreuil aux truffes et Madère	Venison loin with truffles and Madeira sauce.
Escalopes de lièvre au Madère	Hare tenderloin stewed in Madeira sauce.
Escalopes de mouton glacés aux truffes	Mutton tenderloin with truffles.
Faisan à la Périgord	Pheasant with truffle sauce.
Faisan braisé à la vigneron	Pot roasted pheasant stuffed with chestnuts.
Faisan rôti barde	Pheasant roasted.
Fèves de marais	White beans.
Figues	Figs.
Filet	Beef tenderloin.
Filet à la dona sol	Filet with glacéd onions, potatoes and tomato sauce.
Filet aux oignons glacés	Filet with glacéd onions.
Filet de bœuf à la jardinière	Filet, garnished with vegetables.
Filet garni de croquettes	Filet, garnished with meat balls.
Filets de caille à la Lucullus	Quail drumsticks with game sauce.
Filets de cerf	Venison tenderloin.
Filet de faisans à la Royale	Pheasant, roasted, with mushroom sauce.
Filet de perdreaux à la financière	Breast of partridge in brown sauce.
Filet de perdreaux à la Joinville	Breast of partridge with Madeira sauce.
Filets de porc sauce poivrade	Pork tenderloin with high seasoning.
Filets de saumon aux fines herbes	Salmon steak with herbs.
Filet mignon de mouton, sauce poivrade	Small mutton chops with pepper sauce.
Fleurs d'orange	Orange blossoms.
Fonds d'artichauts	Stems of artichokes.
Fraise d'agneau	Lamb fries.
Fraise de mouton	Sheep fries.
Fricandeau de cerf	Roast venison.
Fricassée de pigeon	Pigeon fricassee.
Fricassée de poitrine de veau	Breast of veal fricasseed.
Fricassée de poulet	Chicken fricassee.
Froid	Cold.
Fromage	Cheese,
Fromage de Gruyere	Schweitzer (Swiss) cheese
Gauffres	Waffles.
Gibier	Game.
Gigot d'agneau	Roast leg of lamb.
Gigot de mouton bouilli	Boiled leg of mutton.
Gigot de mouton rôti	Roast leg of mutton.
Gigot de mouton braisé	Pot roasted leg of mutton with vegetables.
Glace à la crême	Ice cream.
Glace aux fruits	Fruit ices.
Gratin de foies gras à la financière	Breaded and truffled goose livers.
Grenouilles	Frogs.
Grillé	Broiled.
Groseille	Currants.
Haasènpfeffer	Rabbit stew.
Hachis de bœuf	Beef hash.
Hachis de cerf	Minced venison.
Hachis de mouton	Hashed mutton.
Hachis de mouton aux œufs	Minced mutton and eggs.
Hachis de veau	Minced veal.
Harengs	Herrings.
Harengs en salade	Herring salad.
Hareng mariné	Pickled herring.
Haricot de mouton	Mutton stew with beans.
Haricot verts	String beans.
Homards	Lobsters.
Homard en salade	Lobster salad.

(*To be continued.*)

BURNETT'S
PERFECTLY PURE HIGHLY CONCENTRATED
Standard Flavoring EXTRACTS

THE superiority of these Extracts consists in their
PERFECT PURITY AND GREAT STRENGTH.

There is no subject which should more engross attention than the purity of the preparations which are used in flavoring the various compounds prepared for the human stomach.

They are not only true to their names, but are prepared from fruits of the best quality, and so highly concentrated that a small quantity only need be used.

JOSEPH BURNETT & CO., Boston, Mass.



ALTHEA.

The greatest hygienic face stimulant. Is the grandest preparation for the complexion ever discovered.

PRICE, $1.00 PER BOTTLE.

MANUFACTURED BY THE

ALTHEA COMPANY

25 West 125th St., N. Y.

Ask your druggist for it, or send direct to us.

"ROYAL POLISH"



The Most Reliable Dressing FOR Ladies' and Children's Shoes.

It is the BLACKEST.
It COATS the Leather the LEASTS.
Does NOT INJURE the Finest Kid.

There is nothing AT ANY PRICE equal in quality, or so convenient and CLEANLY TO USE.

SOLD EVERYWHERE.

Ask Dealers for "BIXBY'S ROYAL POLISH."



"BIXBY'S BEST"
For GENTS' BOOTS.

Shines Quickly!
Saves Labor and Leather!!

—TRY—
"Size 5" OR "Size B"
WITH
Pat. Sliding Handle



THE MOST PERFFECT EVER INVENTED.
Working under the box, ready for use when wanted



FRENCH MUSTARD.

WHAT IT IS AND HOW IT IS MADE.

Under the name of "French mustard" there are several articles of varying degrees of excellence (and cost) in the market. Formerly nearly all of these mustards were made in France, at Lyons, Paris, and Strasburg, each after a different formula. Great quantities are now prepared in this country, the products being more or less accurate imitations of the originals. The finest of the French brands is what is known as "Le Normande's Moutarde à la Ravigotte," and is made as follows: Take of parsley, chervil, chives, celery, and tarragon, of each 1 ounce; ground cloves, garlic, and thyme, of each 4 drams; grind together and add 4 ounces of salt; macerate the whole in 2 quarts of the best white wine vinegar, stirring well at least twice every day. At the expiration of fifteen days strain through a course cloth and set aside. Take 1 pound of the finest flour of mustard, made by grinding dried black mustard seed, and bolting through a fine sieve, and rub it up with 4 ounces of olive oil, gradually adding the vinegar obtained by maceration, and thoroughly mixing as you go. When nearly finished, add enough sugar to give a slightly sweetish taste. When finished, pour into *terrines* or earthen pots, and cork tightly. The French manufacturers usually thrust a red-hot poker or bit of iron down into the center of each pot, and quickly withdraw it, before corking and sealing. Some makers use anchovies in oil rubbed to a smooth paste instead of plain olive oil.

THE BITER BITTEN.

A TRUE VERSION OF THE PURE LARD QUESTION.

Copies of English papers have come to hand, containing articles particularly directed against American refined lard which, for many years, has been sold and used, with general acceptance, in England. German and French papers, also, indicate that those countries, too, have had their own agitation of the subject. From its present wide publicity, the question becomes one of national importance, and it is not agreeable for us Americans, as honorable people, to trace a movement which has for its strong characteristics, these unscrupulous business methods, stamped by our friends across the water as "Yankee." To establish, if possible, a market for their own products, a few interested dealers were willing to jeopardize a great export trade, and unjustly close foreign ports to an article that had, for many years, been one of the staples of commerce. It is interesting to follow the movement from its inception here, and see how greed has overreached itself. A narrow minded packer, who was a rival with the refiners for the lard trade of his section, awakened to the fact at a late day, that the world moves; that an improvement in manufacturing had been perfected; and that lard made from all sorts of fat of a filthy animal cannot stand in competition with that partly composed of the fat of the wholesome beef and the nutritious oil of a pure vegetable. He at once determined to destroy an industry he could not meet, and declared himself to the world, a champion of legitimate trade against deceptive dealing; promised disclosures of fraud and imposition on a credulous public; stated that great quantities of vile, cheap, deleterious substances were palmed off on consumers under the name of refined lard, and ended by dragging before Congress the lard refiners of the country, assuring his fellow butchers, who were induced to assist him by the prospect of personal gain, that they would get the strong arm of the Government under Congressional enactment to break down a business competition which they could not meet with goods as cheap or wholesome. The butchers' war-cry was that "these goods (refined lard) were not sold for what they were." The valuable time of learned Senators and able Representatives was employed in long, exhaustive examinations and cross-examinations of Government chemists, hog butchers and lard refiners, with the result that the elicited testimony grew strongly cumulative in favor of refined lard as a healthful, nutritious, chemically pure, edible fat. It was shown: That the term refined was distinctive in its title, and distinguished the article from the crude packing house filth. That, for years, it had been a well known fact, that refined lard was not entirely the product of the hog, as it had to be prepared and hardened for both hot and cold climates, to become an article of commerce. That the entire country had at its command the two lards; knew their compositions and their respective merits, and dealt largely in refined, and that the consumer who had been using refined lard for years had found it pure, healthy and nutritious, and was able to buy it at a price 10 per cent. lower than the packers' stuff, which difference, to the wage earning masses, added just so much more to the purchasing power of the poor man's dollar. One by one, the different committeemen of each branch of Congress were lead to see the personal greed which alone actuated the movement; and that the packers' concern for the public weal was but a cover for the hand reaching for the public pocket. This fact, together with the uniform superiority of refined lard as an article of domestic use and commerce, constantly made friends for refined, and has decided Congress to take no action in favor of "pure lard." On the contrary, the volume of damaging evidence, which was piled up against packers' lard established the fact that it was an article entirely unfit for edible purposes; and if only from a sanitary point of view its use should be prohibited. One witness before the committee stated: "The lard tank was the sewer of the packing house. That there were now no greases or inferior qualities of packers' lard sold as such, but that the fat from every part of the filthy hog went to make the 'packers' pure lard." A workman in one of the packing houses stated that, in making so-called 'pure lard,' he first put into the tank pig's heads, with some hair on, then pig's feet (hoofs, toes and all), then the rough lard and white grease, made from the feet, guts, head, paunches and genitals. This fact was corroborated by a fellow workman, who stated that heads of hogs, bones, pig's feet, white grease, rough lard and trimmings, all went to make "pure lard." Mr. W. G. Bartle, an old packer of St. Louis, testified "that he visited an establishment at Kansas City the foreman of which stated that no white grease was now made as such, but that all was run into the tanks and mixed into 'pure lard.' Mr. Bartle stated that piggy sows, that drop their pigs on the cars, were driven to the butcher's scalding tubs and made into 'pure lard.' He added that, formerly, packers only used the leaf and the trimmings from the sides, hams and back for 'pure lard,' while the inferior lard and white grease were sold separately and for what they were; but now such distinctions were not known— all went to make 'pure lard,' and that the prime steam lard of to-day was detestable, and that enough filth was used in that direction to disgust everybody." There was much damaging testimony reserved (not fit for publication) which not only corroborated all this, but effectually showed how debased, how unwholesome and repulsive was the so-called "Pure Packers' Lard." To apply the packers own language, "their goods were not sold for what they were," and had they been, the public would have turned from them in disgust. There was introduced in the Congressional testimony, letters from English lard refiners concerning the "pure lard" sent to England for refiners' use, in view of recent developments have a peculiar significance. Messrs. Irreven & Brothers, lard refiners of Liverpool, wrote: "We are frequently prevented from buying American lard in America owing to the state of affairs there brought about by adulteration." Messrs. Bancroft & Co., Limited, lard refiners, Liverpool, also wrote to the same effect, while an importer of Glasgow, Scotland, which place imports the bulk of the lard coming here into this market, indeed, we might say all, with the exception of one or two brands is notoriously impure. It has come to such a point now that we know cases where buyers will not buy lard at all, but are getting other articles to take its place, such as cotton seed oil and refined beef fat. Among bakers, who were formerly large consumers of lard, many of them do not use it at all but confine themselves to the use of oils."

Now, to sustain all this, and to show the Pharisitical sham prosecution of the "pure lard" makers, we have the analysis of England's most practical and skillful chemist, A. Norman Tate, Liverpool, England.

LIVERPOOL, *June* 20, 1888.

Messrs. Marples Jones & Co., Liverpool.

Referring to my report of this date, there is no definite method that can be employed to determine the exact proportion of cotton seed oil, but I send you figures which indicate approximately the percentage of that oil present in your samples:

J. P. Squire, & Co., Boston. Lard indicating 15 per cent.

J. Wright & Co. Choice family lard, indicating 18 per cent.

C. H. North & Co. Choice grocery lard, indicating 18½ per cent.

G. Fowler & Sons. Prime family lard, indicating 15 per cent.

Alletsons'. The "Goat" brand lard, indicating 16½ per cent.

Morrell's pure lard "Ottumwa," indicating 15 per cent.

All these samples show some admixture of other fats than lard, but I cannot speak positively, even to approximate proportions.

Bancroft's "Boar's Head" brands, warranted pure; Kilvert's pure lard, Manchester.

These two samples give results which, although in some respects other than genuine lard, yet are of such a nature as not to allow me to say they are lard (hog's fat) mixed with other fats than oil.

(Signed) A. NORMAN TATE,
F. S. C., etc.

These analyses show astonishing percentages of cotton seed oil found by this gentleman in many of the brands of so-called "pure lard."

In view of these exposures, the advocates of spurious "pure lard," and their allies, will be compelled to cease their interested agitation against refined lard in England for business gains. They were badly beaten here, and, now that the true facts are known, this exposure will prove most disastrous to them there.—*Oil, Paint and Drug Reporter.*

A DUCK OF A WIFE.—A woman in Georgia sat up late in the night recently to see a pail of ice water she had hung above the door overturn on her husband when he returned from the "club." She got tired and went to bed. In the morning she forgot all about the pail until she opened the door to admit her mother. The two ladies are still as mad as wet hens.

American Analyst,

Published on the 1st and 15th of each month.

Subscription, - - - - - - $1 per year.
Single Copies, - - - - - - 5 cents.
Subscriptions to foreign countries, - $1.50.

Remit by Express Money Order, Draft, P. O. Order, or Registered Letter.

Advertising rates on application.

EUROPEAN AGENCIES.

On file at "American Exchange," 449 Strand, London; and American Exchange," 35 Boulevard Des Capucines, Paris.

THE ANALYST PUBLISHING CO.,
Publishers.

H. LASSING, M. D., } *Editors.*
T. P. McELRATH, }

No. 19 Park Place, ... New York.

NEW YORK, OCTOBER 1, 1888.

CORRESPONDENTS AND EXCHANGES.

Please direct all business communications to

THE AMERICAN ANALYST,
19 Park Place,
New York.

ANSWERS TO CORRESPONDENTS.

VIATOR.—Your idea is already under investigation. The Erie railway is trying the experiment of running trains through from Jersey City to Buffalo, lighted with electricity. The Faure accumulators are used, and sufficient of the current is stored to furnish a full supply for a round trip of eighteen hours.

M. S., Pueblo, Col.—The smallest working model that we recall is a miniature steam engine now being constructed by a genius in Milford, Conn. Its material is supplied from a silver half dollar. The boiler is to hold about eight drops of water, but with four drops the engine can be worked several minutes. When finished it is to be placed under a glass case three-quarters of an inch in diameter and an inch and one-eighth in height. Some of the parts will be so fine and delicate that they can not be made without the aid of a magnifying glass.

METEORITE.—The phenomenon has not yet been conclusively explained. Scientific men who have studied closely the large collection of meteorites at Harvard College are of the opinion that many of the masses of meteoric iron now known are cleavage crystals, broken off, probably, by the impact of the mass against the atmosphere. From all that appears, the theory has come to be entertained, in respect to the origin of meteorites, that the masses were thrown off from a sun among the fixed stars, and that they were slowly cooled while revolving in a zone of intense heat.

R. W., Easton, Pa.—Printers measure the amount of type required for any given space by the number of "ems" contained therein, the expression originating from the fact that when it was adopted the letter *m* was a square type and so suitable as a standard of measurement. Some curious fact-grinder has ascertained that the Bible contains 3,500,000 "ems"; Webster's Dictionary, 20,000,000; Chambers' Encyclopædia, 58,000,000; Johnson's Cyclopædia, 56,000,000; Appleton's Cyclopædia, 60,000,000, and Encyclopædia Britannica, 140,000,000 "ems." The reading matter in each issue of the AMERICAN ANALYST contains nearly 100,000 "ems,"—more than one-fortieth of the entire contents of the Bible.

THE VAGARIES OF OUR BOARD OF HEALTH.

There is no accounting for the ways of the Board of Health of the City of New York. Its President, selected from the ranks of newspaper workers, has ever since his appointment closely followed the habits of the antebellum negro, who, as soon as he was made overseer, became very exacting with his former fellows. This individual has converted the board over which he presides into a veritable sphynx. No information must be given out to the press from its sacred precincts; but, as the Board of Health derives nearly all of its important information from the press, nothing probably is lost in this way. A few days since the Board of Health, in a sudden spasm of unrestrainable desire to give the public some information in return for the large amounts of money expended by it, posted a circular recommending bromine as a good and cheap disinfectant for general use, and, for fear that the dear public might not know that every druggist sells it, added the name and address of an Ohio manufacturer from whom it might be purchased. Strangely, however, the sapient President, who should have been better advised by his numerous chemists, forgot to mention that bromine is a very dangerous chemical for an inexperienced person to handle, and that even the careless opening of a bottle containing this disinfectant might result disastrously. But the crowning act came when poor Professor Proctor put himself in the power of that august body. A clear and easily diagnosed case of malignant intermittent fever is diagnosed as yellow fever, the victim is hurried through a severe rainstorm from a comfortable sick-room to an ambulance and thence to a pest-house, there to die. There were numerous physicians in this large city who had ample experience in diagnosing yellow fever, but they were not called in. The President of the Academy of Medicine, although he probably never saw a case of yellow fever, and was well known only as a specialist in the diseases of infancy, held just the title that would best suit the purpose. It looks exactly as if they could not resist the opportunity thus offered to show New Yorkers how very watchful their Board of Health is to detect yellow fever, and to secure for themselves a series of sensational head-lines in the newspapers to the effect that even the great Professor Proctor was not exempted from the officious action of this board, who at all times stand ready to show the public that they can make at least a reasonable showing for the large amounts of money appropriated in their behalf. It seems now, however, as if the facts in the case, as proven by the autopsy and other circumstances, would prick this bubble.

GERMANIZING WINES.

According to the *Scientific Review*, champagne, as well as the other French vintages, is destined to suffer heavily from foreign competition. Three causes combine to injure French wines in foreign markets—the excessive rates of duty, falsification and innumerable imitations. As regards champagne, wine merchants across the Rhine now buy the results of the vintages in the vicinity of Epernay and Rheims, carry them into Germany and manipulate them on the most approved French plan. Thus they obtain a product which, although vastly inferior to the French champagne, is good enough for even many of their wealthy customers, who were previously in the habit of getting their wine straight from France. The German Government favors this traffic by imposing a tax of nearly 2 marks on each bottle of champagne which crosses the frontier, while the same wine when known to have been what is called by the writer of the article "Germanized," is subjected to a very light duty. The writer also points out that it is not only the French merchants who suffer owing to this "Germanizing" process, but the glass blowers, cork cutters, cellarers and workmen of every kind who are employed by the great champagne houses in myriads. The future prospects of the whole wine industry are in fact very gloomy, and the worst of it is in the words of the same authority, they are not only the old and sworn enemies of France who strike this terrible blow at her industries, but also her future friends, the Russians. Wines are now manufactured in the valley of the Don, and they are often as good as the French brands of champagne, while wine coming from France is taxed at more than one rouble for each bottle.

SOPHISTICATED SUGAR.

In the recently published report of the Ohio State Board of Health we find considerable space given to the subject of adulteration. Dr. Beckwith who prepared the report, cautions the public against a probable dishonest use of that remarkable coal tar product, saccharin. This article, which was originally described by the AMERICAN ANALYST, is a white soluble powder resembling pulverized sugar in appearance, but possessing two hundred and thirty times the sweetening power of sugar. These qualities Dr. Beckwith apprehends, and other chemists have expressed a similar fear, will be availed of by dishonest refiners for the sophistication of sugar, or as the flavoring ingredient of some inert substance, which will be used as a substitute for genuine cane sugar. One protection the public possesses, however, in the injurious effects which the use of saccharine as a food ingredient is calculated to produce. Distinctly evil results have already been demonstrated in a number of cases where saccharine has been partaken of; and inasmuch as that chemical product possesses none of the nutritive qualities of sugar, its use is not likely to become popular nor to receive the sanction of medical or health authorities.

CHICAGO VS. CITY DRESSED BEEF.

In a recent interview with the proprietor of one of the largest restaurants in New York, the astonishing fact was elicited that Chicago dressed beef has largely superseded New York beef. This, our informant says, is due entirely to the better quality and lower price of the Chicago article. The prejudices against Chicago beef have been entirely lost since the public has found that the beef dressed in Chicago was necessarily of better quality than the home product, from better cattle, slaughtered and dressed in a much more cleanly and wholesome way.

A SPLENDID EXAMPLE.

One day last month the employees of C. A. Pillsbury & Co., the Minneapolis millers, each received an envelope, the contents of which gladdened them exceedingly. The amount of money distributed was the largest ever given employees of any concern in the United States under the profit sharing system. It exceeded $40,000. The amounts individuals received varied from $25 to $2,500. In no case was the amount less than a month's salary.

CONTAGIOUS DISEASES.

ERRONEOUS POPULAR IMPRESSIONS REGARDING THE CAUSE OF EPIDEMICS.

There is nothing of vital importance to the general welfare which is so little understood as the subject of contagion in its relation to epidemics. There are contagious diseases easily propagated by contact with persons affected by them, if this occurs at the critical stage of the attack. The most common of these are smallpox, measles, whooping cough and mumps. The medical fraternity generally include scarlet fever and diphtheria, but the fact in regard to these is not so well established. Both of the latter will run through a family where all are subject to the same conditions, but it is not certain that a person afflicted with either if

transported to a totally different atmosphere will communicate any infection to a visitor in good health. In regard to diseases that are positively contagious, there is a widespread notion that is wholly erroneous. We know many cases of smallpox that are attributed to causes wholly insufficient in our judgment to produce them. A physician of our acquaintance stoutly insists that his mother caught the smallpox in passing a house within which at some distance from the street lay a person suffering from that disease. And another gentleman whom we know asserts that he took the measles simply by driving through a thoroughfare in which lived a family with several children that were just taken with that malady. Of course it is just possible that a strong wind might bring the atmosphere charged with strong contagion from a dwelling to the street, so as to infect one who was passing; but it is far more likely that it was communicated in these and many similar cases by some means far less remote. We know a case where the victim insisted that he must have caught the smallpox in crossing a ferry, within 300 feet of which a ship was moored that had brought home two of the crew sick with it on her last voyage. It turned out afterward that a man just taken with the disease had gone home on a crowded street car not knowing what was the matter with him, and that five persons (three children and two adults, including the gentleman in question) had caught the complaint from him. The infection will remain for some time in a woolen garment; and while the wearer may be protected by inoculation or vaccination, or a previous attact of the disease, a stranger may catch it from this tainted fabric. But, however the infection may be communicated, the fact that these diseases are propagated by contact is well established. But certain other diseases, frequently prevalent as epidemics, are not thus contagious in any sense. Yellow fever is one of these, and it was never communicated in a healthy atmosphere by one who was suffering from it. If all of the Jacksonville fever-stricken patients without injury to themselves could be removed and distributed in healthy northern homes, there would be no more danger to persons coming in contact with them, either as nurses or visitors, than there would be of catching a broken leg from one thus impaired. It is absolutely non-contagious in an atmosphere not charged with the producing causes of the malady. It may be asked why not, then, remove those who are thus afflicted? The answer is that any change in the atmosphere after a patient is taken down with yellow fever is as fatal as a bullet through the brain Even a slight change in the outside air of the same place, caused by a cool wave, will frequently end the lives of a large number, who might otherwise have become convalescent. But the well persons who are not needed ought to be sent away; and though some of them may have the fever after they reach the north, no one of them will carry any "seeds of the disease" to the residents of healthy localities. It is precisely so with cholera and dysentery, two diseases very apt to become epidemic from local causes. There is this difference that these sufferers may, and often have been carefully removed after they were attacked without injury to themselves and certainly without injury to any one else. No one need be scared, therefore, at a personal contact with any of the people of Jacksonville who are fleeing from that fever-stricken place. If they bring the fever in their blood and suffer from it after they arrive, they may be nursed in our hospitals, or even in our dwellings, with no personal dread of any dire result. Yellow fever is produced in new cases by that which caused the disease in others, but it is no more contagious than baldness, or the ossification of an artery. There is something more in the right understanding of this than the mere acceptance of a true theory for the benefit of the intellect. It is a practical question, and gives us assurance that we may deal kindly with those who flee to us for refuge, without incurring any danger through such instrumentality to ourselves or to those dearest to us in our homes.

A POWERFUL PURE FOOD ALLY.

AN IMPORTANT FIELD FOR MICROSCOPIC INVESTIGATION.

If self-protection is among the first of the laws framed in the heart of humanity, a wonderful inconsistency exists in the indifference which is manifested in regard to the sophistication of foodstuffs, and the employment of harmful materials in the manufacture of articles used in connection with daily existence. The statute books of the various States are woefully deficient in laws touching the substitution of the false for the genuine, the harmful for the good, and, as a result, unscrupulous dealers and manufacturers continue to impose on an innocent and ignorant public. If the adulterant of a foodstuff is harmless in itself, no particular evil may result, and the perpetrator of this outrage against his fellows may long remain unsuspected; for usually not until some marked disturbance results is the attention of the public directed to the guilty party. Certain efforts have already been made to control the purity of a few of the commoner articles of food, such as milk, butter, etc., but the laws passed have operated only in certain cities and States, and have not been of universal service. What is needed is a general law, applicable in every State, and this should be followed by the constant and careful inspection of all materials used as food. Until such a law is framed direct teaching of the people is necessary. This can be accomplished by the published analyses of adulterated materials. It is with no small degree of satisfaction that we notice the efforts of the United States Commissioner of Agriculture in this direction. In the thirteenth bulletin issued by the Agricultural Department, the adulteration of butter, etc., is further illustrated, and a series of helio-caustic plates of Dr. Thomas Taylor's fat crystals served to illuminate the text. We are glad that the investigations of the government will not stop here, but that it is proposed to continue with all articles of food which are likely to be sophisticated. Turning to the last report of Dr. E. S. Woods (AMERICAN ANALYST), whose work in this line for the Massachusetts Board of Health is well known, we find that the fraudulent and deleterious adulteration of foodstuffs is extended to an almost infinite variety of materials. Thus, of 1,676 samples which Dr. Woods examined, 498 were adulterated. Now, while it is usual to find that these adulterations are merely the substitutions of a cheaper for a more costly material—the former being nearly always of a harmless nature, as in the case of black pepper, the most common adulterants of which are ground cracker, corn, rice and buckwheat, yet the consumer is deceived into paying a high price for worthless matter, and cheats the system of that good and wholesome substance which is supposed to be supplied. It seems to us that self-protection against this form of fraud should be the concern of every one, and as a large number of these adulterants can be readily recognized by means of the microscope, as we have before pointed out, every pharmacist and physician, and especially the health officers of our larger cities, should endeavor to keep the people posted in regard to the various brands of foodstuffs which are found to be other than absolutely pure. If microscopists were on the alert to expose this nefarious business, not many years would elapse before it would be as difficult to find adulterated foodstuffs as it is now easy.—*The Microscope* for September.

A CHEMICAL FURY.—"The fury of the chemical world," says Mr. Mattieu Williams, "is the element fluorine. It exists peacefully in company with calcium in fluor-spar and also in a few other compounds; but when isolated, as it recently has been by M. Henri Moissan, is a rabid gas that nothing can resist. It combines with all the metals, explosively with some or if they are already combined with some other non-metalic element, it tears them from it, and takes them to itself. In uniting with sodium, potassium, calcium, magnesium, and aluminium, the metals become heated, even to redness, by the fervor of its embrace. Iron-filings, slightly warmed, burst into brilliant scintillations when exposed to it. Manganese does the same. Even the noble metals, which at a melting-heat proudly resist the fascinations of oxygen, succumb to this chemical siren at moderate temperatures. Glass is devoured at once; and water ceases to be water by contact with this gas, which combining with its hyrdogen, at the same moment forms the acrid, glass-dissolving hydrofluoric acid, and liberates ozone."

A WOMAN'S CROWN.

HOW TO MAKE THE HAIR CLEAN AND KEEP IT HANDSOME.

Brush it, and again brush it. This is the beginning and the end of the admonition. Not for you, few girls, who have maids who smooth your hair night and morning. But for you, many girls; good, sweet, wholesome, everyday girls, who are responsible for your own goodness and sweetness and wholesomeness and who wrestle with your own straight or curly tresses. Brush it. So shall your hair be clean and silky. No amount of combing will make it either. Look well to your brush. No wire brush, no heavy silver-backed brush, but even, well-chosen bristles. Abundant hair is an ornament, but it is a responsibility. A woman's crown of glory is apt to be a very dirty diadem. There is no dust catcher equal to a great shock of hair. Every flying particle lodges in the flowing tresses that the poets rave over, and sifts down from silken thread to silken thread whether the locks be brown or gold. If your hair is dull in color, wiry in texture and will not catch the burnished gleam of the last rhyme you read, brush it. If it is losing the gloss it had when you were younger, if it looks old and sickly, brush it. If your hair is fretful and peevish, brush it till it smiles and behaves with docility under the comb again. Wash it first. Beat an egg into foam, rub it well into the roots, thoroughly but gently, then rinse it in lukewarm water. Keep a small brush for the purpose—a nail brush or a tooth brush will answer—and part your hair, strand by strand, until you have cleansed the scalp well over. If your hair is moist by nature, dissolve a little borax and glycerine in the rinse water; if it is harsh and dry use the glycerine only, lest the head, after so much manipulation, feels uneasy or sore. Find an airy place—in the sun if the day be not too warm—and brush the wet hair dry. Brush it caressingly with a soft brush till the moisture is nearly expelled. Then stop petting it and brush briskly with a stiff brush till it is satiny and dry. Did it ever occur to you that the scalp wants exercise and gets very little? The hair fades, sometimes turns white, grows rough and disobedient because it is not fed. Direct a fuller flow of blood to the hair follicles and they will eat and grow young. At bedtime unfasten your hair and brush it. Brush it half an hour every evening for a month. After that brush it fifteen minutes nightly—ten minutes if you have no more time. Loosen it completely, rub it with your fingers, rubbing and brushing alternately, using, as before, first a soft, soothing brush, then a vigorous, stiff one. Brush it to the tips of the longest strands. Gather it very loosely for the night, allowing full ventilation, and in the morning brush it fifteen minutes at first, afterward ten minutes, devotedly every day. If your hair is thin and threatens to fall, or the parting is growing inconveniently wide, let it down at night and massage the scalp. Rub it, gather the loose skin between the fingers, pinch it a little, invent exercise for it with the tips of the fingers. Give it some work to do every day and brush it. Part it on the side at night and give the day's parting a rest. No treatment of this sort produces a sudden or spectacular results, but if there is no disease of the hair follicles, and the general health is good, it will often work wonders in a twelvemonth. Once in a couple of months, more often or less as you find your need, go to a good hairdresser, who will run your locks, tress by tress, through a comb, snipping the broken or split hairs, and leaving healthy growing ends. No indiscriminate chopping at the end of a braid with rash amateur scissors will produce results of much value.

DOMESTIC DIETETICS.

SPECIALLY PREPARED, FROM PRACTICAL TESTS, FOR THE LADY READERS OF THE "AMERICAN ANALYST."

SEASONABLE FOOD.

October.

MEATS.—Beef, mutton, ham, kidneys, liver, venison, sausage.

GAME AND POULTRY.—Pigeon, chicken, duck, woodcock, brant, grouse, partridge, rabbit, snipe, goose.

FISH.—Bass, blackfish, bluefish, clams, cod, crabs, eels, carp, catfish, flounder, halibut, herring, lobster, mackerel, mussels, oysters, pike, porgie, prawn, rockfish, salmon, sea bass, sturgeon, smelt, turtle, white fish, whiting.

VEGETABLES. — Artichokes, beets, beans, broccoli, Brussels sprouts, cabbage, carrots, cauliflower, corn, cucumbers, egg plant, garlic, lettuce, onions, parsley, parsnips, potatoes, radishes, rhubarb, savoy, shallots, spinach, squash, tomatoes, turnips, water cress.

FRUIT.—Apples, bananas, blackberries, grapes, melons, oranges, peaches, pears, pineapples.

PRACTICAL RECIPES.

CLEAR SOUP.—Five pounds of clear beef cut from the lower part of the round, five quarts of cold water; cut the beef into small pieces, add the water and let it come to a boil gradually; skim carefully and set where it will keep at the boiling point eight or ten hours; strain and set away to cool. In the morning skim off all the fat, pour the soup into a kettle, being careful to keep back the sediment. Put into the soup one onion, one stalk of celery, two sprigs of parsley, two sprigs of thyme, two of summer savory, two leaves of sage, two bay leaves, twelve pepper corns, six whole cloves; boil gently twenty minutes; strain through a napkin, first seasoning with salt and pepper to taste; tie the herbs together before putting into the soup.

GRATED CORN PUDDING.—Six ears of corn, grated; two eggs, one teacupful of milk, one-half teaspoonful sugar, salt and pepper to taste, and a small lump of butter.

STEAMED OYSTERS.—Set a covered dish where it will heat; wash and drain the oysters; put them in a shallow tin and place it in the steamer; cover and leave it over boiling water until the oysters are puffed and curled. They may be dressed at table when eaten, or butter, salt and pepper may be added in the kitchen when served in the heated dish.

RICE GRIDDLE CAKES. — Wash and boil a pint of rice; when done, drain and add a pint of warm milk and a scant teaspoonful of salt. Beat up separately the yolks and whites of four eggs; add to the yolks two ounces of melted butter and stir them into the rice; sift into the mixture half a pint of flour, then add the whites, and if two thin add a little more flour. Beat the mixture well. Grease the hot griddle after each batch, and serve on hot plates. If a cover is used when they are sent to the table, use only those having a hole in the top, otherwise the cakes will be heavy, and all the work in beating the batter to make it light will be wasted. Horsford's baking powder (two teaspoonfuls) will save you the extra labor, and when used, two eggs will be found ample.

A NICE METHOD OF USING UP COLD FISH.—Take about a pound of any cold fish, remove the bones, and skin and flake it; place at the bottom of a deep pie dish a layer of the flakes, then one of cold boiled rice—half a teacupful is sufficient for the quantity of fish. Stew the bones in some milk; thicken with a little flour, pepper, salt and a dessertspoonful of anchovy sauce; pour this over the rice layer. Next add a layer of cold hard-boiled eggs, cut in thin slices (two eggs are enough), and then successive layers of fish, rice, eggs and sauce. When the dish is full, having the eggs at top, scatter over it a few finely-chopped capers and some small pieces of butter; then warm thoroughly before the fire or in the oven and serve hot.

QUINCE JELLY.—Wash the fruit; save all the nice parings and seeds; cook for an hour or more in more water than will cover them; then run them through the colander and let them sit until next day, or until the fruit substance has settled; now throw off the clear juice through a thin muslin bag, and set on the fire; when boiling well add one pint of sugar to each pint of juice, and boil until it rolls off the spoon; fill the jelly cups, and let them set by the stove or any warm place a couple of days without covers, so as to evaporate any water if the jelly is not stiff enough.

CRAB-APPLE JELLY.—Cut the apples into pieces without removing seeds or cores, as they improve the flavor of the jelly. Set a stone jar in a pot of hot water; put the apples in the jar without adding water to them, unless they should be very dry, in which case put one cup of water to every six pounds of fruit. Let them boil eight or nine hours. Leave in the jar all night, covered closely. Squeeze out the juice the next morning; allow a pound of sugar to a pint of juice. Put the juice over the fire, and when boiling add the sugar, and boil for a moment or so. Take from fire and fill the jelly glasses which have been dipped in hot water.

ICELAND WHITE FRUIT LOAF.—The whites of twelve eggs, two cups powdered sugar, one cup butter, one cup sweet cream, one-fourth cup brandy, one quart flour, two tablespoonfuls of Horsford's baking powder, two pounds chopped almonds, two cups cut citron, two cups grated cocoanut, two tablespoonfuls lemon extract. Bake until thoroughly done in a moderately hot even.

SPONGE CAKE.—Six eggs; weight of the eggs in sugar; half weight of the eggs in sifted flour (fine and dry); teaspoonful strained fresh lemon juice; few drops essence of lemon; weigh the flour and sugar, and keep them separate; break the eggs and separate the yolks and whites; then beat up the egg yolks and the sugar together till they are very light; now add the lemon juice and half the flour, and beat them in; whisk half the egg whites to a very stiff froth, and pour half of it into the previous mixture. Beat all up well, and then dredge in and whisk well into the mass the remaining half of the flour. After this add the other half of the egg whites; mix them lightly in, and at once pour into a buttered cake tin or mould and bake for about forty minutes in a sharp oven. Try with a knitting needle.

FROTHED CHOCOLATE.—One cup of boiling water, three pints of fresh milk, three tablespoonfuls of chocolate (grated), five eggs (the whites only beaten light), two tablespoonfuls of sugar powdered for froth. Sweeten the chocolate to taste; heat the milk to scalding; wet up the chocolate with the boiling water, and when the milk is hot stir this into it; simmer gently ten minutes, stirring frequently; boil up briskly once; take from the fire, sweeten to taste, taking care not to make it too sweet, and stir in the whites of two eggs, whipped stiff without sugar; pour into the chocolate pot or pitcher, which should be well heated. Have ready in a cream pitcher the remaining whites, whipped up with the powdered sugar. Cover the surface of each cup with sweetened meringues before serving.

WHO KNOWS THEM?—The modern dyer controls about 15,000 shades of color.

UTILIZING WASTE.—Cedar-wood pulp is now made into paper for underlaying carpets, wrapping up wool, etc., as a preservative against moths. The wood used is the heretofore wasted chips of the pencil manufactory.

PORCELAIN SHOT FOR BOTTLE CLEANING.—Under the name of porcelain shot small white globules of porcelain are made in Munich. They are made to take the place of ordinary lead shot used for cleaning bottles, as porcelain is entirely free from the objection of producing lead contamination.

DISEASED MEAT.

ONE OF THE RISKS OF THE METROPOLITAN CONSUMER.

The following appetizing paragraph is quoted from a daily paper:

"The fact that Jersey City butchers, who have been killing cattle affected with pleuro-pneumonia, send meat to Washington Market, is causing some uneasiness among people who purchase their supplies at that market. The Hudson County Board of Health yesterday learned that the Carroll Brothers were killing diseased animals and sending the carcases of the worst specimens to poudrette factories, and sending other carcases not so badly affected to merchants in Washington Market. They have notified the Board of Health of this city. Dr. Martin has a force of meat inspectors on duty at the slaughter houses, markets and ferries. Inspectors Romaine and Goodhart are in charge at Washington Market. Inspector Goodhart said that there is no danger of the meat of diseased cattle being sold for consumption in the city. Animals affected with pleuro-pneumonia are condemned by the officials of the United States Bureau of Animal Industry. When the cattle are slaughtered the United States inspectors are present. They examine the carcase, and all showing signs of the acute form of the disease are buried or burned. Cattle that have been exposed to the disease, but when killed show such slight signs of it that the meat is not affected, are passed as fit for consumption. After the meat leaves the slaughter house it is inspected by Jersey City inspectors, and again when it arrives in this city. Any meat found to be in bad condition by the inspectors here is seized and carted to the offal dock. The inspectors are always watching for affected meat, and say that consumers have no cause for alarm."

A surer safeguard for the public would be to purchase only Chicago dressed beef, for that is absolutely safe to use. Even if diseased meat could be dressed in Chicago, it could not be transported to New York in a condition to be sold.

A USEFUL BOOK.

A SCIENTIFIC DISCUSSION OF DISINFECTANTS AND PREVENTIVES OF DISEASE.

The American Public Health Association has just issued a book of great value to sanitarians. It consists of the work of several distinguished American physicians, appointed by this association for the purpose of experimental work in determining the value of disinfectants in reference to their application in the prevention and treatment of disease. The following are a few of the authors of this work: George M. Sternberg, M. D., surgeon U. S. army, and Fellow by courtesy in the Johns Hopkins University; Victor C. Vaughan, M. D., Ph. D., professor of physiological chemistry in the University of Michigan, and member of the Michigan State Board of Health; Charles Smart, M. D., surgeon U. S. army, and member of the National Board of Health; George H. Rohe, M. D., professor of hygiene in the College of Physicians and Surgeons, Baltimore; Joseph Holt, M. D., President of the Louisiana State Board of Health. The original experimental investigations made by these specialists are of great importance and value, and render this work the most complete and practical volume on disinfection and disinfectants yet published. A large amount of original work is devoted to the various micro-organisms, and in determining the value of many of the so-called disinfectants and germicides. The biological work was conducted mostly at the Johns Hopkins University under the supervision of Dr. Sternberg, and at the University of Michigan under Dr. Vaughan. Various apparatuses used for disinfecting purposes, as well as the admirable quarantine system at New Orleans, is fully described and illustrated.

PETRIFIED SEA SERPENT.—Off the Lizard coast in Cornwall, a freak of nature has been discovered which may have something to do with the name of that part of the coast. In the live rock is a picture of a gigantic serpent, coil after coil reaching down to the sea, just above the surface of which the scaly head, and even the eyes, can be seen.

AN INCH OF RAIN.—An "inch of rain" means a gallon of water spread over a surface of nearly two square feet, or a fall of about one hundred tons on an acre of ground.

LIGHT IN LIGHTNING.—Professor Kolrausch has recently estimated the quantity of electicity in a flash of lightning. He finds that from seven to thirty-five flashes would be required to keep an ordinary incandescent lamp alight for an hour.

ARCTIC MINES.—It is not generally known that important mining operations are carried on in the Arctic circle. Extensive copper mines have been worked for a long time in Finland. Most of the work of mining has to be done underground, and the workmen in deep mines suffer much from heat; consequently it is apparant that mines can be worked as profitably in these high latitudes as in our own country. Deep mines are warmer in winter than in summer. In such work as has to be done above ground there is scarcely any interruption. During the three dark months there is no lack of light to the accustomed eye.

RAILROAD SAFETY.—A wonderful invention is reported from Vienna. An Austrian engineer has, it is said, designed a truck to be run before every railway train, being maintained always at a fixed (but adjustable) distance in front by the force of an electric current transmitted along the mettle from a dynamo on the engine. The current is conducted in glass tubes on the pilot truck. If, therefore the truck comes into collision the tubes are broken and the contact necessarily destroyed. The interruption of the current instantly and automatically applies the brakes on the following train. It is claimed by the inventor that two expresses, fitted with this system, might with impunity be set to run full tilt at each other. The collision of both pilot trucks would arrest the progress of both trains before they could meet.

THE LEMONADE OF OUR YOUTH?—At last one essence dealer has taken the plunge and is boldly advertising Phosphoric Acid in 10-gallon casks as an acidulent for carbonated beverages. The lemonade of the past was sweetened with sugar, acidulated with citric acid, and flavored with pure essence of lemon. And a delicious beverage it was, and is if you know where to get it. But what shall we call a beverage of which the sweetening property is derived from soluble saccharine, the acidulation from phosphoric acid and the flavor from some butyric ether? It certainly requires a new description, for it differs as much from the well-known drinks of commerce as margarine differs from butter. It is really time that this miserable competition to produce the cheapest drink, regardless of the character of its ingredients, should be ended.

THE DYING OUT OF DISEASE.

No more certain evidence of the progress of civilization can be adduced than the ever-increasing health, strength and longevity of society. A cursory glance at history shows that a complete revolution has been silently effected. The plagues and pestilences which are mentioned so frequently in the Bible and the ancient histories have disappeared, so far as modern life is concerned. Small-pox, once a universal scourge, has been almost stamped out of existence. Yellow fever, consumption and the zymotic diseases are slowly coming under human control, and have lost one-half of their terrors. Not only the census tables compiled by the civilized governments, but what are far more accurate and trustworthy, the statistics collated by the life assurance corporations of Europe and America, show a remarkable increase in longevity and average health. It is hard to realize the full significance of these changes. It is difficult to conceive that, while we are richer, happier, wiser and better informed than our forebears, we are also stronger, more vigorous and vitalized; we live longer, and suffer less from sickness, sorrow and premature death.

The greater part of this change is due to the stupendous progress made in chemical, medical and pharmaceutical science. It is no exaggeration to state that these have undergone a complete revolution in the past seventy, if not in the past forty, years. Life and death, health and disease, present very different aspects to the intellect of to-day from what they did to that of the period mentioned. In those times nearly all treatment was based upon the notion that a disease was a mysterious entity which could only be combatted by the most rigorous measures. To-day disease is considered the normal result of abnormal conditions of the system, or as the result of normal processes endeavoring to expel foreign bodies or foreign life from the body. Thus the illness which ensues from the repeated inhalation of air containing lead dust, or from the invasion of the system by the mephitic gases and germs engendered in decaying organic matter, is known in the one case to be of chemical origin and in the other of biologic. According to the individual, the disease in either case may assume one of a hundred forms, and under proportions the disorder resulting from one cause may be nearly indistinguishable from that produced by the other. In the past they would have been treated according to the symptoms by which they manifested themselves, and, where these were identical, the treatment would have been one and the same, the widely different causes hardly being taken into consideration, if even thought about. To-day skillful diagnosis promptly reveals the concealed cause of physical ailment, and scientific treatment is directed at cause and constitutional conditions far more than toward symptoms. Herein lies the chief reason of the cessation of the old practice of throwing vast quantities of powerful drugs and chemicals into a weak patient. The modern practitioner uses these as little as possible, and even then employs the minimum amount that will effect the desired result.

The feature of the present is the thorough knowledge and appreciation of conditions of the organization. It is now a simple truth that under normal conditions of the system disease proper is merely a possibility; that abnormal and diseased conditions are liable to express themselves in any and all sorts of symptoms. The law of health is to prevent and cure all such conditions. To accomplish this, good food, fresh air, sunlight, exercise and cleanliness are imperative. But these do not quite suffice. The impurities which always accumulate in the blood, no matter how carefully a person lives, must be removed before their amount is enough to become pathologically appreciable. This can be done by Ayer's Sarsaparilla. This preparation remedies disease by expelling all the humors which create diseased conditions; it prevents all ailments which arise from such conditions. Its use during forty years over the earth has been largely instrumental in reducing mortality and increasing public health. Used legitimately, it prevents and cures nine-tenths of all the ills to which we are subject. It can do only good to its user, as its only action is to cleanse the system. In this regard it is the greatest aid to progress and the most beneficent discovery made in the history of therapeutics.

BUSINESS NOTES.

RIDGE'S FOOD.

The preparation known as Ridge's Food has been before the public so many years that we are all very familiar with it. A whole generation have eaten it; and while no one ever heard of a case where its use has done the least injury, there are thousands of cases wherein we are assured upon the best authority that it has been the direct cause of restored health and returning strength and vitality. Physicians of the highest standing, who are too careful of their reputation to give certificates to nostrums and worthless or injurious preparations, have certified to its efficacy with patients to whom they have administered it, while hospitals and asylums who could afford to employ it have pronounced favorable verdicts upon it. Now any article of which so much can truthfully be said is entitled to a fair and impartial hearing, before condemning it as a fraud, snare and delusion. Here we have a product which is manufactured by a reputable firm and has been sold all over the known world, which has been purchased and used by millions of people, and from none of these users has one word of complaint been received or heard, when we are suddenly informed that it has been chemically analyzed, and as a result it is alleged that the manufacturers of this article are selling worse than useless trash at a large profit, by the pretence that it is something entirely different from what it really is. The only claimed foundation for this is that it contains something which children cannot digest. But we are not told the whole truth, that it is only children under a few weeks old, who are supposed not to have a sufficient secretion of a substance called ptyaline, or better known in English as saliva, which possesses the property of converting starch into dextrine. On the other hand, we know that diastase, a peculiar substance developed in the germ of all cereal grains by heat, possesses similar properties to ptyaline. Would it not, therefore, seem a rational explanation that the reason this mare's nest has never been discovered before is that in practical use Ridge's Food has been found just as efficacious as if it had been composed of soluble starch. Chemistry is a great science, but chemistry and physiology have not yet been fully reconciled. A good illustration of this is found in the fact that chemists have succeeded in making from coal tar an artificial quinine, which only chemically considered is isomeric, or chemically identical with genuine quinine made from cinchona, yet physiologically it will not in any way answer the important purposes of quinine. Again, if the chemists who attack Imperial Granum are correct, how many children of years ago who were nearly all brought up on arrowroot, another so-called insoluble starch, would have lived? Happy were our grandmothers in their blissful ignorance of such modern chemistry; they were at least not scared to death. One reason for the great success Ridge's Food has had, lies in the fact that it is carefully prepared from a peculiar wheat which is manipulated in a manner which many years' experience has shown to be best calculated to produce the best results. A laborer is worthy of his hire, and the manufacturers of this food are reaping their reward financially as well as in the happy consciousness that they are contributing their share to the welfare of their fellow men, regardless of what they justly consider malicious attacks from interested and suspicious motives.

HOW TO MAKE COFFEE.

Although the finest grades of coffee are to be found in every first-class grocery store throughout the land, and although the average citizen usually purchases the most expensive and best rather than the cheaper and inferior kinds, yet a cup of good coffee is rarely found upon an American table. This singular fact is partly ascribable to popular ignorance on the subject, and especially to the general use of worthless coffee-pots.

The slightest study will teach any one endowed with ordinary intelligence how to make a faultless cup of coffee.

In the first place, those kinds should be purchased which best suit the palate of the user. There is no such thing as *best* coffee. There are at least a dozen recognized kinds of the berry which represent the most scientific and successful coffee culture. Of these may be mentioned as examples Mocha, Java, Laguayra, Maracaibo, Ceylon, Mountain Berry, Brazilian and Persian. All of these have a distinct bouquet flavor and composition. One person will prefer Mocha, where another has the same esteem for Java, a third will prefer a simple coffee, and a fourth a mixture of different kinds.

Let the buyer purchase the kind or the mixture of kinds which most pleases him. This rule goes so far as to include chiccory, which, to many drinkers, is of more importance than the coffee with which it is combined.

Second.—Buy the coffee in the bean and not ground. This is not a slur upon the grocer, although many of that calling adulterate with sweepings, roasted beans and the cheapest berries, but because ground coffee rapidly deteriorates on exposure to the air. In many

cases it is well to purchase glazed coffee—*i. e.*, that which after being roasted has been glazed with sugar, albumen or other preservatives.

Third.—Grind the coffee just before making; grind into a flour. Coffee, as usually ground, does not allow the hot water to extract more than one-half of its virtue.

Of the coffee consumed in the United States, at least one-half is ignorantly wasted in this manner. To the objection that many coffee-pots will not allow the use of a fine flour as recommended, the only reply is that such utensils are worthless. Not only do they waste, but what they make is the poorest and most insipid fluid that can be drunk.

In such cases where it is difficult to obtain a good pot, the ground berry should be encased in a bag and that thrown into boiling water.

Fourth.—Use a scientific coffee-pot. Coffee contains a long series of delicate, aromatic and delicious compounds, which are rapidly dissolved and extracted by boiling water; it contains also tannin and other bitter and disagreeable elements, which are similarly dissolved, but with comparative slowness. For this reason it should never be boiled. At the furthest, boiling water should be poured through it, once preferably, but two or three times if a less aromatic but heavier-bodied infusion is desired. It should also be borne in mind that the more valuable elements are volatile, and are rapidly dispersed in the open air by heat and exposure. Therefore, coffee should be made as far as possible in closed vessels, without access of the atmosphere through either the top or spout of the pot. Any pot which complies with these conditions is a good one. All others are more or less objectionable.

Fifth.—Use the "Good Morning Coffee Percolator," the latest and best invention in this regard yet made. It conforms to all the conditions named. The top and spout are rendered air-tight by a thoroughly-fitted cover and lid. The material is made of the finest metal or the highly-finished agate ware, and allows neither corrosion on one side nor a metallic taste on the other. The chief feature is a strainer fitting the walls, the sides being made of a closely-woven fabric, while the bottom is a more open material, so arranged as to compel the boiling water to pass through the dry coffee, and so fine as to allow the use of the finest coffee that comes from the grinder. The fineness of the coffee allows the boiling water to extract all its virtue, and the close fitting of the various parts absolutely prevents any loss or injury by steaming or evaporation. It has the further advantages of durability, excellence and economy. It is not only the best, but it is also in the long run the cheapest coffee-pot known to the world.

SHAPING THE NOSE.

One of the most important features of the human face is the nose. There are some eight types of noses which have been designated by name. Some of these are very illshapen. Many a good looking face is spoiled by a badly shaped nose. The latest thing in the way of beautifying the face has been accomplished by altering illshaped noses. This is accomplished without pain or injury by various mechanical appliances by Dr. J. H. Woodward, in Albany, the specialist in extirpating superfluous hair and removing birth-marks.

IMPERIAL GRANUM.

This standard preparation for infants and invalids is steadily moving forward as the years roll by, winning hosts of friends wherever its merits become known. We have been familiar with it for many years, and now take pleasure in describing a recent remarkable case, with the facts of which we are personally cognizant. A lady of ——, Mass., was so reduced by a very severe attack of tic-doloreux, and from the effects of the powerful drugs necessarily given to relieve her sufferings, that she was attacked with black cholera morbus, and for days laid in an unconscious condition, life being sustained by champagne. As a last resort she was sent to a Boston hospital, so weak that she had to be moved on a bed, and her physician said it was almost impossible for her to recover. At the hospital they began using Imperial Granum, a one-half teaspoonful at a time, which after several trials was retained, and the quantity increased, until the patient, after four weeks treatment, during which she lived entirely on Imperial Granum, was discharged from the hospital comparatively well, and so built up that in eight weeks she endured successfully a severe surgical operation, and to-day is carrying on a large business in Boston which calls for continued and exhausting work, and is, to use her own words, "in perfect health."—*The Cottage Hearth, Boston, Mass.*

OATS.

What is now known as Keith's *Con. Tinc. Avena Sativa* was first made by Dr. B. Keith in March, 1884. E. H. M. Sell, A. M., M. D., first brought to the notice of the profession the *Con. Tinc. Avena Sativa* for the treatment of the OPIUM AND MORPHIA HABIT, citing cases which he had successfully treated by its use. The great value of the *Con. Tinc. Avena Sativa* has resulted in the market being supplied with many manufactures of FLUID EXTRACT OF OATS, OR AVENA, "Essence of Oats," etc. But in no case has a manufacturer claimed to follow the Keith method of preparation, viz.: by first obtaining the *active principle by precipitation*, and then dissolving such precipitate in given quantities, to make the *Con. Tinc. Avena Sativa*, by which process ONLY can it be made of uniform strength, owing to variability in strength of oats in the market. Owing to the extraordinary effect of the *Con. Tinc. Avena Sativa* in diseases of the *nervous system*, some parties have expressed their belief "that it contained some narcotic drug or drugs in combination with the oat." We know that the *Con. Tinc. Avena Sativa* made by B. Keith & Co., New York, contains only the active principle of the oat, as before stated. A pamphlet containing fuller information as to the employment of this preparation may be had free upon application to the manufacturers.

A BETTER PLAN.—A physician says: "If a child does not thrive on fresh milk, boil it." This is too severe, why not spank it?

ANALYZE "MONON" Resolutions!?

Whereas, The Monon Route wishes to make known to the world that it has the finest system of Pullman Buffet Sleepers and Chair Cars, running between Chicago and Louisville, or Chicago, Indianapolis and Cincinnati;

And Whereas, This makes it in fact the double connecting link of Pullman travel between the winter cities of Florida and the northern summer cities; then

BE IT RESOLVED, That, before starting on a trip, be sure and address E. O. McCormick, Gen'l Pass. Agent, 185 Dearborn Street., Chicago, for rates, etc.

Horsford's
ACID PHOSPHATE.

A preparation of the phosphates of lime, potash, magnesia and iron, and phosphoric acid, in solution, that is readily assimilated.

Especially recommended in all cases where the use of phosphoric acid or the phosphates is indicated, such as exhaustion of the physical, nervous and cerebral systems, gastric and liver derangement, gravel, and other calcareous deposits, cholera, scurvy, consumption, etc.

As a menstrum for the administration of strychnina, morphina, quinina, and other organic bases which are usually exhibited in acid combination, it is unsurpassed.

It makes a delicious drink with water and sugar only, and harmonizes with such stimulants as are necessary to prescribe.

Dr. G. F. WILBER, Nashua, N. H., says: "It is a very elegant method of using phosphorus."
Dr. T. C. SMITH, Charlotte, N. C., says: "I attach the highest importance to it as a therapeutic agent, of well-defined and specific value."
Dr. C. EARLE, Pontiac, Mich., says: "I do not hesitate to recommend it to the confidence of the profession."
Dr. T. B. PORTER, Freeport, Ill., says: "It is an excellent therapeutic agent."
Dr. I. W. MARTIN, Des Moines, Ia., says: "I take pleasure in adding my testimony as to its therapeutic value."
Dr. E. BROWN, Omaha, Neb., says: "I find it a very useful remedy."

Send for descriptive circular. Physicians who wish to test it will be furnished a bottle on application, without expense, except express charges. Prepared under the direction of Prof. E. N. HORSFORD, by the

Beware of Substitutes and Imitations.

RUMFORD CHEMICAL WORKS, PROVIDENCE, R. I.

CALIFORNIA
Fine Table Wines
From our Celebrated Orleans Vineyard.
Groud Roussillon & Co
Producers of the
ECLIPSE
CHAMPAGNE,
530 Washington St.
SAN FRANCISCO.
PARK & TILFORD, New York, } Agents.
C. JEVNE & CO., - - Chicago, }

FACIAL BLEMISHES.

The Largest Establishment in the World for their Treatment. Facial Development, Hair and Scalp, Superfluous Hair, Birth Marks, Moles, Warts, Moth, Freckles, Wrinkles, Red Nose, Acne, Pimples, Black Heads, Scars, Pitting, etc., and their treatment. Send 10 cts. for book of 128 pages, treating on 25 skin imperfections, 6th edition revised and illustrated.
Dr. JOHN H. WOODBURY,
210 West 42d St., New York City, N.Y.
Inventor of Facial Appliances, Springs, etc.
Six Parlors; three for Ladies. Established 1870.


BLAIR'S PILLS
Great English Remedy for Gout, Rheumatism and Kidney Complaints.
Sure, Prompt and Effective. Oval box 34, round box 14 pills.
At all druggists, and 224 William St., New York.

HORTON, CATO & CO.'S


"ROYAL" SALAD DRESSING.
The best prepared Dressing, always fresh, does not turn oily, rancid or decompose as other dressings of a similar nature.
"ROYAL" WORCESTERSHIRE SAUCE,
The Peer of American Product.
HORTON, CATO & CO.,
SOLE PROPRIETORS AND MANUFACTURERS,
DETROIT, MICH.

RIDGE'S FOOD
is the most reliable substitute known for mother's milk. Its superiority rests on the test of 30 years use in Great Britain and the U. S. A sustaining, strengthening diet for Invalids; nutritious, easily digested, and acceptable to the most delicate stomach. Four sizes, 35c. up. Pamphlet, "Healthful Hints," sent free. WOOLRICH & CO., Palmer, Mass.

All Postmasters will receive subscriptions for the **AMERICAN ANALYST.**

GOLD You can live at home and make more money at work for us than at anything else in the world. Either sex; all ages. Costly outfit FREE. Terms FREE. Address, TRUE & CO., Augusta, Maine.

KEITH'S
CON. TINC. AVENA SATIVA
(From Common Oats.)
Without Admixture of any Kind.
A Powerful Nerve Stimulant, Tonic, Etc.
Was first offered to the medical profession by B. Keith & Co., in 1881, as a remedy to be employed in the treatment of
Paralysis, Epilepsy, St. Vitus' Dance, the Morphia or Opium Habit, Chloral and Tobacco Habits, Sleeplessness, Nervous Debility and Exhaustion, Neuralgia, Alcoholism Painful and Deficient Menstruation, Headache, Hysteria, Impotency, Convulsions and Prostration from fainting, and in the Convalescent stage of all Acute Diseases.
Dose.—From ten to thirty drops, or more, as often as may be indicated to meet the urgency of the case. Administer in hot water when quick action is desired.
An Overdose Causes Pain at Base of Brain.
——We make one quality only.——
Price,
2 oz., 45c.; 4 oz., 75c.; 8 oz., $1.35; 16 oz., $2.50
B. KEITH & CO.,
78 William Street, N. Y.

ON THE USE OF PURGATIVES.

BY CHARLES A. HOFF, M. D., ST. LOUIS, MO.

Of all preparations contained within the *pharmacopœia,* there are none, apparently, held in higher esteem by mankind than that class of medicines, commonly known as purgatives. The busy practitioner confidently prescribes them with variable frequency, singly and combined, from the date of the writing of his very first prescription to that of his last; and the corner druggist rarely sees a day pass over his head on which he does not greet the customer who has called around to get "something to act upon his bowels." Indeed, the inevitable purgative awaits the tiny baby screaming in its first attack of colic; it is resorted to by the invalid weighted down with years of suffering and disease; and it is by no means despised by the individual in robust health, when assailed by the various petty ills, which even the most vigorous seldom entirely escape.

Notwithstanding the fact that purgatives are so generally prescribed by the physician, and so frequently resorted to without advice by the patient, they are not altogether incapable of doing harm. As everybody knows, the habit of purging the system repeatedly with salines, cholagogues, hydragogues, or drastics, is a most pernicious one; and the physician who fails to exercise a proper care, both in the selection and the administration of cathartics will sooner or later bankrupt the health of his patients as well as his own hard earned reputation.

Constipation is a complication of so many disorders, a symptom of so many diseases that its treatment in different cases depends upon very different considerations. For a simple, ordinary attack, the average doctor has been accustomed to use a simple purge, such as castor oil, sulphate of magnesia, rhubarb, senna, aloes, colocynth, blue pills, etc.; yet in none of these, can it be truly said, has there been found all that could be wished for, even in so simple a matter as a laxative. Where can we find the physician who has not been vexed and annoyed at the complaints of his patients against the purgative medicines he has been accustomed to prescribe. Some people there are who can not or will not swallow pills; many object to the nauseating castor oil; not a few oppose the use of salines since they are disagreeable both in taste and effect; many look upon all resinous cathartics as objectionable on account of their so called heating properties; aloes is objected to in pills and especially in pregnancy; elaterium is said to be excessively harsh and severe, croton oil is known to be dangerous; podophyllin causes an undue amount of griping; blue mass is avoided on general principles; and so on to the end of the chapter.

Fortunately, however, the physician of the present need no longer be placed in a dilemma when called upon to prescribe a preparation free from the faults enumerated in connection with ordinary purgatives. The pharmacist has bravely come to his aid with a formula of incomparable excellence; and this preparation, a combination of "manna, purified cathartic acid and fruit juice," although but recently brought to the notice of the medical world, is, nevertheless, already regarded as a most valuable addition to the resources of medicine.

The happy thought that suggested the combination known as the Rio Chemical Co.'s Acid Mannate justly challenges unlimited admiration and esteem, and has thus far evoked from the profession an almost universal verdict of commendation and praise. Prompt, mild and certain in its action, Acid Mannate may well be considered an ideal remedy in the constipation of pregnancy. Being pleasant to the taste, and continuing its good work without increased dosage, it is pre-eminently adapted to cases of habitual constipation. Indeed, in its wide range of adaptability as an aperient medicine it is impossible to exaggerate its importance, or allude either directly or indirectly to the vast variety of its beneficial, therapeutical properties.

The importance of laxatives is probably nowhere appreciated so much as in the constipation of pregnancy; and it is to this fact, no doubt, more than to any other, that Acid Mannate owes its great popularity and fame among remedial agents. The testimony of thousands of honorable medical gentlemen leading us to believe that, through the beneficent effect of this same elegant formula, constipation need not hereafter, as in the past, be regarded as one of the most troublesome attendants upon gestation. Moreover, the atrocious female pill of unknown composition but of dire effect, which has deluged the drug market for ages, we may consider as having had its day; and it is to be hoped that, since the physician is now in possession of a purgative especially suited to the period of gestation, female life will be less frequently harassed by the ails and aches said to be peculiar to the sex; and that miscarriages, displacements, granular erosions, congestions, headaches, dyspeptic and hypochondriacal attacks, and the whole long train of aches, pains and nervous ills will grow less familiar to the medical profession in the same ratio that the physician increases his familiarity with the actions of Acid Mannate.

A full sized bottle of Acid Mannate will be sent free to any Physician who desires to test it, if he will pay the express charges and mention this Journal, on application to the

Rio Chemical Co.,
St. Louis, Mo.

J. HENRY HENTZ. J. P. ROBINETT. J. HENRY HENTZ, Jr.

ESTABLISHED 1798.

WHITE, HENTZ & CO.,

SOLE PROPRIETORS OF

Trimble and Pennsylvania Monogram Whiskies.

222 and 224 NORTH SECOND ST., PHILADELPHIA.

D. LIEBER, 17 South William St., New York. Col. H. A. SELIGSON, 1200 Pennsylvania Ave., Washington, D. C.

NATRONA BI-CARBONATE OF SODA.

(ABSOLUTELY PURE.)



The nature of the raw material from which NATRONA BI-CARBONATE OF SODA is made—viz., kryolith, a mineral containing *pure sodium*—insures a purity and uniformity of product which cannot be obtained from any other known material. In making BI-CARB. SODA from any other raw material, the use of sulphuric acid is a necessity, but none is used in any part of the process of making NATRONA BI-CARB.; hence its entire freedom from the slightest trace of arsenic, which is always present in ordinary soda. Its absolute purity and entire freedom from all traces of *sulphate of soda*, common salt and other impurities, render NATRONA BI-CARB. NEARLY TASTELESS, and being bolted through the finest bolting-cloth, insures the finest stage of division.

To these indisputable facts the attention of CONSUMERS of soda is specially called. They are IMPORTANT, and should influence both those who use and those who sell soda, to buy and sell NONE BUT THE BEST.

The NATRONA BI-CARB. Soda is kept in stock by almost every wholesale druggist and grocer throughout the United States, of whom it may be ordered.

Natrona Bi-Carb. Soda is unequaled by any other brand of English or American Manufacture.

PENNA. SALT MANUFACTURING CO.,

NATRONA CHEMICAL WORKS. PHILADELPHIA, PA.

ALTHENE SKIN SOAP

An absolutely pure and perfect soap for all purposes of the toilet, nursery, bath or sick-room. Has the approval of leading chemists and physicians, and is recommended by all who have used it. Price 25 cts. a cake, or 65 cts. for a box of three. Can be obtained of the retail druggists or from

J. W. CAMPION & CO., 916 Filbert Street,

PHILADELPHIA.

AMERICAN ANALYST CLUB RATES.

	Regular Price.	Price including American Analyst.		Regular Price.	Price including American Analyst.
American Magazine	$3 00	$3 00	Harper's Young People	$2 00	$2 25
American Rural Home	75	1 05	Harper's Weekly	4 00	4 00
American Agriculturist	1 50	1 60	Harper's Monthly	4 00	3 50
Arthur's Home Magazine	2 00	2 00	Household	1 10	1 35
Babyhood	1 50	1 60	Housekeeper	1 00	1 25
Ballou's Magazine	1 50	1 75	Ledger	3 00	3 00
Cassell's Family Magazine	1 50	1 75	Lippincott's Magazine	3 00	2 50
Century	4 00	4 00	New York Weekly	3 00	3 00
Christian Herald, N. Y.	1 50	1 50	Our Little Ones and Nursery	1 50	1 65
Christian Union	3 00	3 00	Peck's Sun	2 00	2 25
Country Gentleman	2 50	2 50	Peterson's Magazine	2 00	2 00
Demorest's Magazine	2 00	2 00	Puck	5 00	4 50
Family Story Paper	3 00	3 00	Rural New Yorker	2 00	2 30
Farm and Fireside	50	1 00	Saturday Night, Philadelphia	3 00	3 00
Fireside Companion	3 00	3 00	Saturday Evening Post, Philadelphia	2 00	2 00
Frank Leslie's Illustrated Newspaper	4 00	4 00	Scientific American	3 00	3 25
Frank Leslie's Popular Monthly	3 00	3 00	Scribner's Magazine	3 00	3 00
Galaxy of Music	1 00	1 25	Vick's Illustrated Monthly	1 25	1 50
Gleason's Home Circle	2 00	1 50	Western Rural	1 50	2 00
Godey's Lady's Book	2 00	2 25	Wide Awake	2 40	2 60
Golden Days	3 00	3 00	Yankee Blade	2 00	1 50
Good Housekeeping	2 50	3 00	Young Ladies' Journal	4 00	3 50
Harper's Bazar	4 00	4 00	Youth's Companion	1 85	2 25

If any paper is desired, not mentioned in the above list, a postal card inquiry will receive a prompt reply. Address,

THE ANALYST PUBLISHING CO.,

19 Park Place, New York.

MALTED MILK

THE ONLY FOOD

For Infants and Invalids

THAT CONTAINS ALL THE ELEMENTS OF NUTRITION, WITHOUT A SINGLE ADDITION.

MALTED MILK does not have to be cooked.

MALTED MILK needs no addition of milk, only to be stirred up with water, which can be done without the slightest fuss or trouble.

MALTED MILK will not spoil in hot weather.

MALTED MILK is always ready for immediate use night or day, when traveling or at home.

MALTED MILK does away with the danger of using sour or impure milk.

MALTED MILK is free from starch and cane sugar. All foods that have to be cooked contain starch.

Ask your physician his opinion of **MALTED MILK**, he knows all about it.

Price, . . . 50 Cts. | Large Size, . $1.00

Extra Large Glass Jars for hospital and family use, ... $3.75

These contain five times the quantity of the $1.00 bottles.

A sample bottle will be sent free to any Mother or Invalid sending their address to

MALTED MILK CO.

RACINE, WISCONSIN, U. S. A.

THE TORSION

Braided Wire Mattress.

At all times a thoroughly ventilated and perfectly clean mattress, it cannot absorb odors, or retain exhalations or disease germs.

D. HAYES AGNEW, M. D., Prof. of Surgery, University of Pennsylvania, says:

"The Torsion Braided Wire Pillow and Mattress I regard as superior to anything of the kind now in use; well suited for either private or hospital use.

Prof. WM. H. PANCOAST, late Professor of Anatomy, etc., in Jefferson Medical College, now Professor of Anatomy and Clinical Surgery in the Medico-Chirurgical College of Philadelphia Hospital Surgeons, says:

"I have used in my surgical practice your Braided Wire, in the form of mattresses, pillows for the head and body, and short pillows for the arm and leg when injured. I find them most admirable, cool and light, yet affording perfect and elastic support. I have saved a patient from bed sores by the use of the Braided Wire mattress."

WM. H. FORD, President Board of Health, Philadelphia, says:

"I have used the Torsion Braided Wire Mattress with great satisfaction, it is light and therefore easily handled; it is elastic and very comfortable. The case can be easily removed to afford a complete airing, a feature of great importance from a health point of view. It is an invention of great usefulness.

For descriptive circular and price list, send to

The Torsion Braided Wire Upholstering Company,

1017 CHESTNUT ST., PHILA.

"BILLET"

are

Carefully Selected

French Sardines,

Packed in Choicest Olive Oil.

AT ALL LEADING GROCERS.

Any Retail Druggist in the United States who desires to obtain Advertising Matter, Show Cards, Signs, etc., which will assist and instruct him in the sale of Harriet Hubbard Ayer's Recamier Toilet Preparations and Vita Nuova, should address THE RECAMIER MFG. CO., 52 and 54 Park Place, New York City.

UNEQUALLED Ask your Grocer for, and insist on having, **LEA & PERRINS'** Sauce, "The Worcestershire." It is known throughout the whole civilized world as the Best and most Delicious Sauce. **DELICIOUS.**

SCOTCH MARMALADE, Jams, Fruit and Wine, Jellies, &c.
By James Keiller & Son, Dundee.

SCOTCH BISCUITS, Albert, Water, and Oat Cake,
By Robert Middlemass & Son, Edinburgh.

RACAHOUT des Arabes, by De Langrenier, Paris.

BAY WATER, West India, (J. D. S. brand), in cases, one dozen bottles.
Sold by all first-class Grocers.

JOHN DUNCANS' SONS, 43 Park Place, New York. Agents for the United States.

Robert Gordon's
TRADE MARK.

SPICED · SEA · FOODS

(IN GLASS.)

OYSTERS, LITTLE NECK CLAMS, MUSSELL, SHRIMP, LOBSTER, Etc.,

Packed in 8 and 16 oz. Jars. Guaranteed to be strictly Pure.

MADE OF THE FINEST MATERIALS.

—ALSO,—

ROBERT GORDON'S CONDENSED CLAM CHOWDER,

In 3-lb Cans. Cheapest and Best in the Market.

MANUFACTURED BY

JONES, GORDON COMPANY, Limited,

204 West Street, New York.



GOLD MEDAL, PARIS, 18[illegible]

BAKER'S

Breakfast Cocoa.

Warranted *absolutely pure Cocoa,* from which the excess of Oil has been removed. It has *three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup.* It is delicious, nourishing, strengthening, easily digested, and admirably adapted for invalids as well as for persons in health.

Sold by Grocers everywhere.

W. BAKER & CO., Dorchester, Mass.

Sura Cura

ROBINSON'S SURE CURE FOR

RHEUMATISM

And NEURALGIA,

And remedy for diseases arising from an impure state of the blood. An antidote for **MALARIA.** Price 50 c. and $1. Sent by mail on receipt of price. Send for Circular.

R. W. ROBINSON & SON,
184 Greenwich Street,
NEW YORK.

Sura Cura

STEWART CERAMIC CO.,

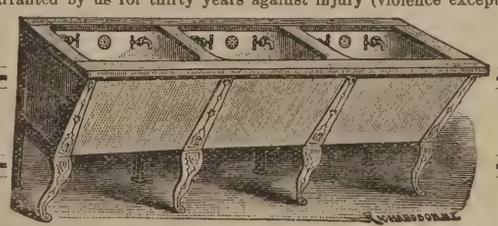
312 PEARL ST., Cor. Peck Slip, NEW YORK.

Sole Manufacturers under Morahan's Patents of

SOLID WHITE CROCKERY STATIONARY WASH TUBS

Warranted by us for thirty years against injury (violence excepted).

CANNOT LEAK.



VERY STRONG.

This cut shows three Tubs set up with galvanized iron stands and heavy ash frame firmly secured on top.

SMOOTH GLAZED SURFACES. ALWAYS CLEAN.

The only solid white crockery Washtub ever made in the world. Do not buy imitations until you see the genuine "Morahan's Patent," stamped on every tub. Washboard and Soapcup moulded in every set.

SOLID WHITE CROCKERY SINKS

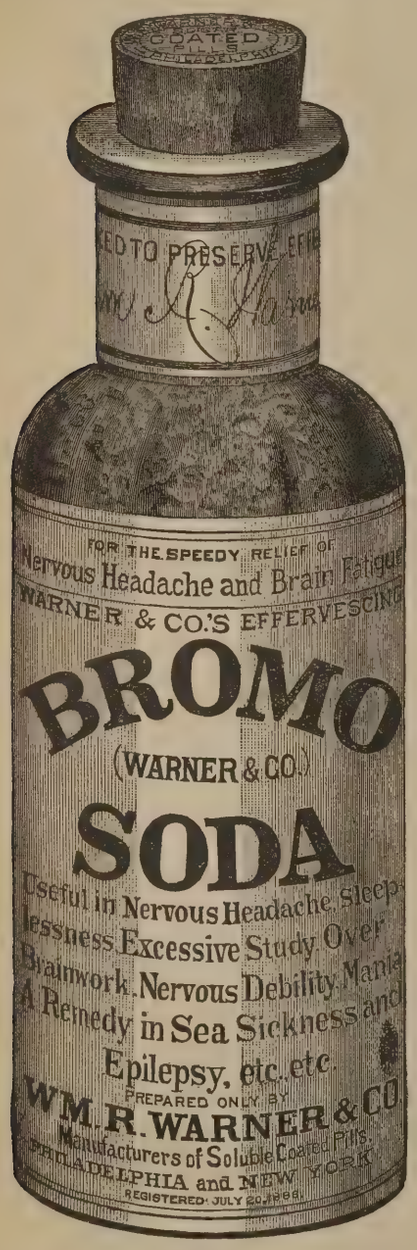
Made of same material as the Tubs and fully as strong.

Send for Illustrations and Price Lists. **Send for Illustrations and Price Lists.**

Good Subscription Agents wanted by AMERICAN ANALYST.

FOR THE ILL-EFFECTS
— OF —
Summer Heat, Heat Exhaustion.

Where after a prolonged exposure to a heated atmosphere you feel exhausted, depressed and tired mentally as well as physically, take a dessert spoonful of Bromo-Soda in half a glass of water, and drink while effervescing, when relief will be sure to follow.



A Cure for Sick Headache, Sleeplessness, Etc.

ASK FOR BROMO-SODA and TAKE NO SUBSTITUTE.

THE LABORATORY.

To Inventors, Manufacturers and Applicants for Patents

The AMERICAN ANALYST may be consulted upon all matters involving theoretical or applied chemistry. Advice and opinions given. Analyses and assays made. Patents perfected and secured. Terms reasonable.

Address, AMERICAN ANALYST,
19 Park Place, N. Y.

Does the Baby Sleep?

It will, if the little stomach is supplied at regular intervals, according to the age, with the proper nourishment.

RIDGE'S FOOD

fills the bill. WOOLRICH & Co. on every label.

A GOOD INCOME.

We have enabled several gentlemen and ladies to add largely to their incomes by paying them liberal commissions on subscriptions.

For further particulars address

AMERICAN ANALYST,

19 Park Place, New York.

Look Here, Friend. Are you Sick?

Do you have pains about the chest and sides, and sometimes in the back? Do you feel dull and sleepy? Does your mouth have a bad taste, especially in the morning? Is there a sort of sticky slime collects about the teeth? Is your appetite poor? Is there a feeling like a heavy load on the stomach, sometimes a faint, all-gone sensation at the pit of the stomach, which food does not satisfy?

Are your eyes sunken? Do your hands and feet become cold and feel clammy? Have you a dry cough? Do you expectorate greenish colored matter? Are you hawking and spitting all or part of the time? Do you feel tired all the while? Are you nervous, irritable and gloomy? Do you have evil forebodings? Is there a giddiness, a sort of whirling sensation in tho head when rising up suddenly? Do your bowels become costive? Is your skin dry and hot at times? Is your blood thick and stagnant? Are the whites of your eyes tinged with yellow? Is your urine scanty and high colored? Does it deposit a sediment after standing? Do you frequently spit up your food, sometimes with a sour taste and sometimes with a sweet? Is this frequently attended with palpitation of the heart? Has your vision become impaired? Are there spots before the eyes? Is there a feeling of great prostration and weakness? If you suffer from any of these symptoms, send me your name and I will send you, by mail,

One Bottle of Medicine FREE

Send your address on postal card to-day, as you may not see this notice again.

Address, naming this paper, Prof. HART, 88 Warren St., New York.

ESTABLISHED 1823.

ALEX. YOUNG CO., Limited,

DISTILLERS OF

Y. P. M. WHISKIES.

DISTILLERY, - - - Nos. 408, 410, 412 and 414 South Street.
MALT HOUSE, - Nos. 416, 418, 420, 422 and 424 South Street.
STORE, - - - - - - - - - - No. 700 Passyunk Avenue.

PHILADELPHIA, PA.

New York Office, – 78 Wall Street.

FOR SALE BY

PARK & TILFORD, and ACKER, MERRALL & CONDIT.

LEA & PERRINS' SAUCE.

Lea & Perrins', the original and genuine Worcestershire Sauce, has been before the public over a half a century. Like all popular favorites it has long been the standard of comparison and the pattern for counterfeiters who not being able to imitate its excellence offer to the public imitations in bottling, labels and style of putting up. They dare not counterfeit the signature of Lea & Perrins which is on the red label of every genuine bottle, and of which this is a facsimile.

Lea & Perrins

To be sure of obtaining the genuine article, see that the above signature is on the label.

A SET BACK TO ALL PREVIOUS INVENTION.

EDUCATION Quick vs. Old System **Dead.** Education almost by machine process. As mind is above matter so is this method (simply by seven words) above all previous invention of whatever kind. **A Wherewithal Book, $1.00 Form.**

We **guarantee** you will be more than **satisfied.**

If you want this method remit $1.00 by Registered Letter or send Check and receive by mail a great **possibility** from the sole originators and proprietors of the **New Education,**

WHEREWITHAL COMPANY Philadelphia, Pa.

Ask Grocers for our Patent Barley **CRYSTALS,** a new, unrivalled **Cereal Food,** for Breakfast Tea & Dessert. If not sold there, write us for free samples. **GLUTEN FLOUR** and **SPECIAL DIABETIC FOOD** are invaluable waste-repairing flours for **Dyspepsia, Diabetes, Debility & Children's Food.** No bran; mainly free from starch. For all family uses nothing equals our **HEALTH FLOUR.** Send for circular offering 4 lbs. free.

FARWELL & RHINES, Props., Watertown, N.Y

SPECIAL HARVEST EXCURSIONS.

The Northern Pacific R.R. announces a series of five special Harvest Excursions from St. Paul, Minneapolis, Duluth and Ashland to principal points in Minnesota, Dakota and Montana during August, September and October. Parties contemplating a trip for pleasure, business, or with a view of selecting a new home can avail themselves of rates lower than ever before announced to visit the wonderful country tributary to the Northern Pacific R.R.

Tickets will be on sale at St. Paul, Minneapolis, Duluth and Ashland on August 21st, September 11th and 25th, and October 9th and 23d, limited to thirty days from date of sale, and good for stop-over on going passage. These rates to Montana points are about one cent per mile each way, and in some cases about half of the one way fare for the round trip.

Connecting lines east and south of St. Paul, Minneapolis and Duluth will sell tickets in connection with these excursions at one fare for the round trip.

The dates named will be a very opportune time to visit the wheat fields of Minnesota and North Dakota: also to see the cattle ranges of Montana. Everybody should bear in mind that the Northern Pacific R.R. is the short and direct line to principal points in Montana, and the only line running either dining cars, Pullman sleeping cars, or colonist sleeping cars to Fargo, Grand Forks, Fergus Falls, Wahpeton, Jamestown, Helena, and principal points in Northern Minnesota, North Dakota and Montana.

For rates and other information apply to Chas. S. Fee, General Passenger and Ticket Agent, St. Paul, Minn., or nearest ticket agent.

SCOTT'S EMULSION

OF PURE COD LIVER OIL WITH HYPOPHOSPHITES OF LIME AND SODA.

THE STANDARD EMULSION OF COD LIVER OIL THROUGHOUT THE WORLD.

A BEAUTIFUL CREAMY MIXTURE—ALMOST AS PALATABLE AS MILK.

Having much greater remedial power than the crude Cod Liver Oil, without any of its nauseating effects. Its PALATABLENESS, EASE OF DIGESTION, and long tolerance by most sensitive stomachs as well as its reliable therapeutic effect, has given it special favor with the medical Profession, and receives their unqualified endorsement and support.

Possessing as it does the tonic and stimulating properties of the Hypophosphites in combination with the strengthening and fattening qualities of the Cod Liver Oil—gives it a remedial value in WASTING DISEASES, ANÆMIA or IMPOVERISHED BLOOD, EMACIATION and CONSUMPTION—unequalled by any single or combined remedy in existence. The rapidity with which delicate children fatten and grow strong on this palatable Emulsion, is very remarkable.

Samples will be sent free except express charges to any wishing to try this preparation. For sale by all druggists.

SCOTT & BOWNE, New York.

PEACOCK'S BROMIDES

(SYR: BROM: COMP: PEACOCK)

NERVE SEDATIVE.

Each fluid drachm represents 15 grains of the Combined C. P. Bromides of Potassium, Sodium, Calcium, Ammonium and Lithium.

USES:—EPILEPSY, and all CONGESTIVE, CONVULSIVE, and REFLEX NEUROSES.

This preparation has stood the test of time and experience, and can be relied upon to produce results, which can not be obtained from the use of commercial bromide substitutes.

DOSE:—One to two FLUID drachms, in WATER, three or more times a day.

PEACOCK CHEMICAL CO., St. Louis.



These Goods are "Par Excellence,"

Pure, Healthful and Reliable, warranted to give satisfaction in every particular. For sale by wholesale and retail grocers throughout the United States. VOUWIE BROS., Manufacturers, CLEVELAND and CHICAGO.

OPIUM AND LIQUOR HABIT CURED.

WE solicit an investigation of our system and methods, and will gladly send to any one very interesting matter on the OPIUM HABIT DRUNKENNESS and their effects and cure. Physicians specially invited to examine, and if desirous of trying our remedies, liberal arrangements will be made with them.

THE LESLIE E. KEELEY CO., Dwight, Illinois.

ESTERBROOK'S STEEL PENS

Leading Numbers



14,048,128
130, 135,
333, 161.

—For sale by all stationers.—

THE ESTERBROOK STEEL PEN CO., 26 John St., N. Y.
WORKS: CAMDEN, N. J.

THE FINEST MADE
COLBURN'S
PHILADELPHIA
MUSTARD
KING OF CONDIMENTS

ESTABLISHED 1867.

J. H. CUTTER,

OLD

BOURBON AND RYE WHISKIES.

We are the Sole Owners and Proprietors of this Celebrated Brand of Whiskey.

C.P.MOORMAN & CO. **LOUISVILLE, KY.**

We Guarantee the Superior Quality and Absolute Purity of every Barrel of Whiskey sold by us under this Brand.

W. P. FESSENDEN, Agent for N. E. States, Maryland and Penn., 11 Central St., Boston.

The American Medical Digest.

A MONTHLY EPITOME

OF THE

Best, Most Practical & Useful Papers

CONTAINED IN THE

MEDICAL PUBLICATIONS OF THE WORLD.

A Current Record of Monthly Progress of Medical Science.

$2.00 PER ANNUM.

THE ANALYST PUBLISHING CO.

PUBLISHERS,

19 Park Place, New York.

SWIFT'S

Choice Chicago Dressed Beef

—AND—

MUTTON.

CAN be found at all times in full supply and at popular prices at the branch houses in all the larger cities and is retailed by all first class butchers.

The trade of all marketmen and meat dealers is solicited for our Wholesale Branch Houses, and the public may rest assured that in purchasing our meat from dealers they will always receive the best.

SWIFT AND COMPANY,
UNION STOCK YARDS,
CHICAGO, ILLS.

Tabasco Pepper Sauce

OR LIQUID PEPPER.

Is simply the Pulp of the Ripe Pepper Extracted by Pressure.

The seed of this Pepper was obtained from Central America, and by careful cultivation in Louisiana for many years has been so improved in strength, flavor and aroma, as to have become a new variety of Red Pepper, superior to all others. The pulp is so handled as to retain all the flavor, strength, aroma and color of the ripe fruit, and to keep unimpaired in any climate. It excites the appetite, promotes digestion, and is pronounced, by connoisseurs, to be the finest condiment in the world. For medicinal purposes it recommends itself by its purity, strength and diffusible form.

Manufactured by E. McILHENNY,
NEW IBERIA, LA.

For Sale by all Wholesale Grocers.

CARNRICK'S SOLUBLE FOOD

IS UNLIKE ANY OTHER INFANT'S FOOD THAT HAS EVER BEEN PRODUCED.

℞

THE FORMULA.

Partially Predigested Milk Solids,	**45 parts.**
Wheat with the Starch converted into Dextrin,	**45 "**
Milk Sugar,	**10 "**

We do not claim this food to be "a **perfect** substitute for human milk." But we do claim that **Carnrick's Food approaches nearer to human milk in constituents and digestibility than any other food that has ever been produced**, and that it is the only infant's food that will, without the addition of cow's milk, thoroughly nurse a child from its birth.

We believe that **Carnrick's Food** solves the problem of a reliable substitute for human milk. The Caseine of cows' milk, by partial predigestion with freshly made Pancreatine, is rendered as easily digestible by the infant as human milk.

We have never published an analysis of **Carnrick's Food** "prepared with milk," for, unlike all other foods, it is prepared by the addition of water only, and we base our claim upon the intrinsic value of the food as compared with an equal amount of solid constituents of human milk. All other analyses or comparisons are misleading. We challenge similar comparisons with any other food, and confidently believe, that if **Carnrick's Food** is depended upon for the nutrition of infants, the great mortality among children will be reduced. Full information regarding the process of manufacture will be cheerfully furnished, and samples sent free to those who wish to test **Carnrick's Food.**

REED & CARNRICK, New York.

GORDON & DILWORTH

MANUFACTURING PURVEYORS

Established 1847

ALIMENTARY PRODUCTS

ALL OF OUR PRODUCTIONS BEAR THIS TRADE MARK

WE WILL PROSECUTE ALL INFRINGEMENTS & IMITATIONS







CHOICE DESSERTS

OVER 100 DOMESTIC & FOREIGN FRUITS AND VEGETABLES TRANSMUTED INTO TABLE DELICACIES

PRICES ON PRESERVED FRUITS REDUCED 1ST DEC. 1885

PRESERVED, CANNED & BRANDY FRUITS, FRUIT JELLIES, VEGETABLES, TOMATO CATSUP, SYRUPS & JAMS, SALAD DRESSING, BLACKBERRY BRANDY, MINCE MEAT, PLUM PUDDING, SWEET PICKLES, OLIVES & CAPERS, WINE JELLIES, MARMALADE, SOUPS SAUCES &c

SOLD BY THE LEADING GROCERS ON THE AMERICAN CONTINENT.

GRAND NATIONAL PRIZE OF 16,600 FRANCS.

QUINA-LAROCHE

VINOUS ELIXIR,

A STIMULATING RESTORATIVE AND ANTI-FEBRILE TONIC.

This meritorious ELIXIR, QUINA-LAROCHE, is prepared from the **three** Cinchonas; it is an agreeable and doubtless highly efficacious remedy.—*The Lancet.*

QUINA-LAROCHE, under the form of a vinous Elixir, contains the totality of the numerous principles of the **three** Cinchona barks. It is a preparation which renders great services to Therapeutics.—Extract of the *Gazette des Hôpitaux*, Paris.

Far superior to all Ordinary Cinchona Wines.

LAROCHE'S QUINA, tried by the Academy of Medicine of Paris, is a specially prepared Compound Extract of Quinquina, a careful analysis, confirmed by experience, has shown that most of the wines and syrups hitherto used have not contained all the properties of this precious bark, of these some, although beneficial, are altogether lost, while many preparations contain but half the properties of the bark in varying proportions.

Mr. Laroche, by his peculiar method, has succeeded in extracting all the active principles of the quinquina, combining these with *Catalan Wine*, forming an Elixir free from the disagreeable bitterness of other similar preparations. Practitioners have found triple advantages in the use of this Elixir; it is a *strong tonic*, is easily administered, and perfectly harmless, being free from the unpleasant effects of Quinine.

THE FERRUGINOUS QUINA-LAROCHE is the invigorating tonic *par excellence*, having the advantage of being easily assimilated by the gastric juice, without, in any way, deranging the action of the digestive organs, proving itself to be a most efficacious remedy in cases of impoverishment of the blood, **Anæmia, Chlorosis, Intestinal Hemorrhage, Castralgia, Exhaustion,** etc., etc.

PARIS.—22 RUE DROUOT.—PARIS.

J. Laroche

E. FOUGERA & CO., New York, Sole Agents for the United States.

MALTINE

MALTINE is far superior in nutritive and diastatic value to any Malt Extract manufactured in the World. There is no reconstructive that excels Maltine in Phthisis and many wasting Diseases.

MALTINE in its different forms is the only malt preparation we now employ, being so palatable, digestible, and easily assimilated. Of its efficiency in appropriate cases there is no more doubt in our minds than there is of the curative power of Quinine, Cod Liver Oil, the Bromides, and the Iodides.
It deserves to stand in the front rank of constructives, and the constructives by their preventive, corrective, and curative power are probably the most widely useful therapeutical agents that we possess.
PROF. L. P. YANDELL.

MALTINE is a valuable food, a food of priceless value at times of emergency. In fact, in very grave gastric cases it is a food which may be often resorted to when at one's wits end what to do.
J. MILNER FOTHERGILL.

Out of 14 trade samples of Malt Extract examined by Messrs. Dunstan & Dimmock, ONLY THREE possessed the power of acting on starch. These brands were MALTINE, Corbyn, Stacey & Co.'s Extract, and Keppler's Malt Extract. WILLIAM ROBERTS, M.D., F.R.S.

I have subjected "Maltine" and all other leading "Extracts of Malt" to an exact quantitative comparison of their diastatic activity. The results demonstrate conclusively the far greater diastatic value of Maltine, and enable me to state, without any qualification whatever, that it far exceeds in diastatic power any of the six preparations of Malt which I have examined. R. H. CRITTENDEN,
Professor of Physiological Chemistry in Yale College.

At the International Health Exhibition held in London, England, the only gold medal and the highest award of merit were given to Maltine by a Jury composed of the best chemists in Europe, and recent analyses made by the most reliable authorities in Europe and America prove conclusively that Maltine—in nutritive and diastatic value—is superior to all other malt preparations now in the market.

NOTE.—Physicians will observe that Maltine, as now prepared, is not so viscid as formerly made, being of a more fluid consistency; and, while retaining the nutritive and diastatic value which has given it precedence over all other Extracts of Malt, it is rendered entirely agreeable to the taste of the most fastidious, and is more easily administered. As now prepared, we positively guarantee that Maltine will not ferment or congeal in any climate or at any season of the year.

COMPLETE LIST OF MALTINE PREPARATIONS.

MALTINE (Plain).	MALTINE with Phosphates, Iron Quinia, and Strychnia.
MALTINE with Alteratives.	MALTINE Ferrated.
MALTINE with Cod Liver Oil.	MALTO-YERBINE.
MALTINE with Hypophosphites.	MALTO-VIBURNIN.
MALTINE with Peptones.	MALTINE with Cascara-Segrada.
MALTINE with Pepsin and Pancreatine.	

Physicians may obtain Maltine from all druggists in every part of the world. In cases where the physician intends to prescribe Maltine, the word "Maltine" should be written, and not simply the words "Malt Extract," or "Extract of Malt."
Send for Pamphlet giving comparative analyses by 100 of the best Analytical Chemists in this country and Europe.
We will be happy to supply any regular practitioner with eight ounces each of any three Maltine compounds that may be selected from our list, providing he will agree to pay express charges on same.

THE MALTINE MANUFACTURING CO.,
54 Warren Street, New York.
Laboratory, Yonkers-on-Hudson.

In corresponding with Advertisers, please mention the AMERICAN ANALYST.

GREENWAY'S PORTER
—AND—
DOUBLE AND EXTRA DOUBLE STOUT.



Greenway Bottling Co..

BOTTLERS OF

GREENWAY BREWING CO'S BRANDS OF ALE, PORTER, DOUBLE STOUT

—AND—

Germania Brewing Co's Standard Pale Crown Lager & Culmbacher.

N. Y. Depot, 31 Broadway.

ESTABLISHED IN LONDON 1831.



W. G. DEAN & SON,

—MANUFACTURERS OF—

PASTE AND STICK

LICORICE

PURE CALABRIA, Equal to the Imported

Try our SICILY (brand select).

BEST IN THE MARKET.

Also LICORICE TABLETS.

361 & 363 Washington Street,
And 84, 86 & 88 North Moore St.,
NEW YORK

W. G. DEAN,
HARRY W. DEAN.

—THE—

CHRISTIAN MOERLEIN

Brewing Co.,

CINCINNATI, U. S. A.,

Brewers of the far-famed

"NATIONAL" EXPORT

(The Queen of Beers)

LAGER.

Owing to its absolute purity, beautiful pale color, fine aroma and nutritious qualities, the above beer has become the PRIME FAVORITE in all the principal hotels and clubs, and in thousands of families throughout the West and South.

Pure LAGER BEER,

"IMPERIAL" and "CULMBACHER"

Brewed & Bottled SPECIALLY FOR HOTELS, CLUBS AND PRIVATE FAMILIES

—BY—

Beadleston & Woerz

291 W. 10th St. New York.

Orders by Postal Card promptly attended to.

H. CLAUSEN & SON

BREWING CO'S

CHAMPAGNE LAGER BEER,

ROYAL EXPORT LAGER,

EAST INDIA PALE ALE,

EXTRA AMERICAN STOUT.

Bottled for Family Use and Export by

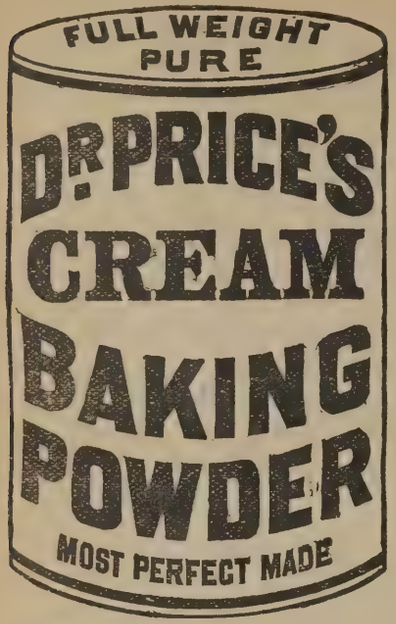
PHŒNIX BOTTLING CO.

888 and 890 Second Avenue,

Bet. 47th and 48th Streets

NEW YORK.

Order from your Grocer, or direct from us.



Its superior excellence proven in millions of homes for more than a quarter of a century. It is used by the United States Government. Endorsed by the heads of the Great Universities as the Strongest, Purest, and most Healthful. Dr. Price's Cream Baking Powder does not contain Ammonia, Lime or Alum. Sold only in cans.

PRICE BAKING POWDER CO.
NEW YORK. CHICAGO, ST. LOUIS.

STERLING



BAKING POWDER

MADE FROM 99.5/100 PURE CREAM TARTAR.

This powder never varies. A marvel of purity, strength and wholesomeness. More economical than the ordinary kinds. SOLD ONLY IN CANS.

STERLING MANU'F'G CO.,
12 & 14 Spruce St., New York.

"GOOD MORNING"

COFFEE PERCOLATOR.

RICHEST, PUREST, BEST CUP OF COFFEE EVER MADE.

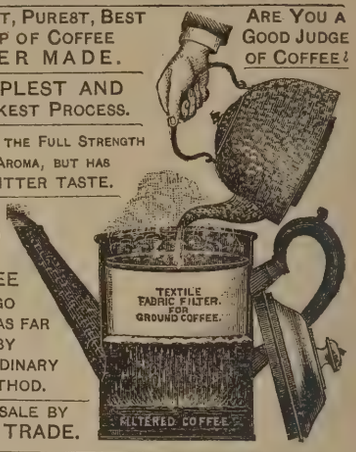
SIMPLEST AND QUICKEST PROCESS.

RETAINS THE FULL STRENGTH AND AROMA, BUT HAS NO BITTER TASTE.

ONE POUND OF COFFEE WILL GO TWICE AS FAR AS BY ANY ORDINARY METHOD.

FOR SALE BY THE TRADE.

ARE YOU A GOOD JUDGE OF COFFEE?



IF YOU CANNOT PROCURE IT IN YOUR TOWN, WRITE TO

MANNING, BOWMAN & CO.
57 Beekman St., New York.
Circulars and Price List sent Free on Application.

MANUFACTURED BY THE



YOU CANNOT OBTAIN THESE GOODS



Excepting by being measured at one of our stores or sending your order by mail. The **reputation** of these justly celebrated goods is now so widely known in every State in the Union that we have only to keep plainly in the public view, directions how to obtain the

FAMOUS CUSTOM-MADE PLYMOUTH ROCK $3 PANTS.

Suits cut to order $13.25.
Overcoats cut to order $12.00.

1. "Only a postal card" sent to our Boston store, **provided you MENTION THIS PAPER,** brings by return mail 20 samples cloth to select from, self-measurement blanks and a linen tape measure. 2. But *if you have not time* to wait for samples, tell us about the color preferred, with **waist, inside leg** and **hip** measures, remit $3, together with 35 cts. to cover cost of expressage or postage, and we will forward the goods prepaid to any address in the U. S., guaranteeing safe delivery and entire satisfaction or money refunded.

ONLY A POSTAL CARD

Remember that for any cause we refund money at buyer's request upon return of goods, or make alterations on new garments **free of extra charge.**

Address all mail to **Boston Store.**

PLYMOUTH ROCK PANTS CO.,
18 Summer Street, Boston, Mass.;
285 Broadway, New York;
Burnside Building, Worcester, Mass.

A letter from the American Express Co. (capital $20,000,000) about our standing and business methods may be obtained by writing to them at Boston.

ESTABLISHED 1872.

GELATINE.

JAMES CHALMER'S SON'S

Transparent Gelatine.

PURITY—STRENGTH.

Best for Family Use.
Jellies, Blanc Mange, Etc.

ACKNOWLEDGED BY EVERY ONE EQUAL TO THE BEST.

Natural Lithia Water.

FARMVILLE LITHIA WATER

FROM VIRGINIA.

—Not only Relieves, but—

CURES

Bright's Disease, Kidney Troubles of all Kinds, Rheumatism, Rheumatic Gout, Dyspepsia, Bladder Troubles, Diabetes, Calculi, Albuminuria. Without Taste or Odor. An Unapproachable Record in Results.

Sold by HAZARD, HAZARD & Co., Fifth Avenue Hotel, and other first-class Pharmacists. Pamphlet free upon application.

FARMVILLE LITHIA SPRINGS CO.,
298 Broadway, New York, and Philadelphia.

RUBY ROYAL "SEC."



This wine, of a bright crimson or Ruby color, possesses exceptional merit in all the characteristics of dryness, mellowness of flavor, and delicacy of fragrance. It is the only red champagne in the market, and can be tried at the Hoffman House, Delmonico's and other first-class places.

Sold by the Leading Grocers.

AGATE IRON WARE

Is the Purest, Cleanest, Most Durable, and altogether the Best Ware for family use ever made. It will not rust or break like ordinary Enamels, and is absolutely pure and safe to use, as certified to by the most eminent chemists here and abroad.



Two thousand different styles and sizes of Agate cooking utensils, for family use, are sold by all first-class dealers throughout the world, and giving universal satisfaction.

AMERICAN ANALYST

FOR THE

FAMILY AND CONSUMER.

A SEMI-MONTHLY ADVOCATE OF PURE FOOD AND THE SUPPRESSION OF ADULTERATION.

Office, 19 Park Place.

[Entered at the Post Office at New York, as Second Class Matter.]

VOL. IV.—No. 20. NEW YORK, OCTOBER 15, 1888. Whole No. 92

CONTENTS.

A Baker's Profits..... 421
Answers to Correspondents..... 418
Calcatroni's Revenge. Complete Story..... 413
Domestic Dietetics..... 421
Editorial..... 418
More Crockery Poisons; The Loco Weed; Scientific Frauds; A Serious Adulteration Evil; Bogus Champanges; Aerial Vegetation.
Eggs as Food..... 420
French Dishes—(*Continued*)..... 416
Infants' and Invalids' Foods. By Dr. F. Wyatt.. 419
Kitchen Recipes..... 421
Kitchen Reform..... 417
Lamp Wicks, How to Trim..... 420
Milk as a Beverage..... 420
Primeval Vanity..... 420
Table Luxury and Decoration..... 417
Warming the House—(*Continued*).. 417

CALCATRONI'S REVENGE.

Do you remember the incident that made so much talk four or five years ago, at the marriage of Antonin Leroux, the banker's son, with Mlle. de la Combe-aux-Fontaines? Certainly ugly rumors ran at that time upon the solvability of this speculator, who had been partner with an Italian, the Count Calcatroni; the Italian occasionally visited the Leroux at that epoch, but he has since ceased to appear at the house.

On two or three occasions some charitable souls pretended that the marriage was broken off, but the ceremony took place, in spite of the oracl s. The wedding gifts were numerous and splendid, and the envious persons asked themselves where that filibuster Leroux had taken all that, maliciously emphasizing the word.

Among the witnesses for the bride was the learned Desroches, librarian at the National Library, and a great friend of the Combe-aux-Fontaines. His functions of librarian imposed duties that seemed contradictory. He was obliged to be the most obliging of men, but also the most defiant. In each one of the readers who called upon him his role was to see a brother in science and almost a friend, but a friend whose fingers he must watch unceasingly, and whose pockets he must sound with an exercised regard. Desroches often said:

"I have known faithful cashiers who never stole; but there does not exist a human being who is not capable, at some hour in his life, of stuffing a rare or curious book under his coat."

"In leaving the church the guests went to the house of Mme. Leroux, who offered a lunch. In one of the parlors the bridal gifts were displayed. Among the jewels exhibited was a diamond necklace, given by Antonin's father. This present attracted all the attention, and reduced to nothing the evil reports spread about the speculator's affairs. The necklace was worth at least six thousand dollars. All at once, as the elegant crowd attacked the buffet, a clamor arose. "The diamond necklace is stolen!"

In this circumstance Leroux acted like a veritable grand seigneur. After turning very red at first, he immediately recovered himself, and as the confusion increased, he said:

"My friends, it is an incident without consequence; don't let such a trifle trouble this beautiful day! A money wound is not mortal. My dear children, may this light and premature shadow be the only one that ever obscures your happiness!"

"Let us close the doors and call the roll," cried some of the guests.

"Never!" protested the master of the house, in an indignant voice. "I will not allow any one to suspect the honor of my guests and those of my daughter-in-law!"

In an adjoining room Mme. de la Combe-aux-Fontaines made her daughter breathe salts while saying to her friends:

"This is what they call business society! I don't say anything against my son-in-law, of course, but a speculator's friends are always rather mixed."

In short, the adventure was painful, and a great many of the guests breathed more freely when they were in the open air. In ten minutes the Leroux parlors were empty. Just at that moment a servant said to the speculator that some one was waiting for him in his private room. He went there and found the old servant, Desroches, greatly agitated.

"Monsieur," began the librarian, "I am accustomed by my professional duty to watch everything that takes place around me. I saw the theft committed. The one who did the act is a man of about fifty, lean and very dark complexioned. You know him, for you shook his hand several times at the church. Here is a detail which renders all mistakes impossible; this estimable gentleman was the only one this morning who wore his decorations on a little chain. I followed him into the street, and as I was about to speak to him, the crowd separated us, and the fellow jumped into a cab. But I took the number of the cab, and here it is. The rest is your affair. It is useless for me to say that I am ready to give my testimony. Shall we go?"

At these words Leroux got up, and with a stride placed himself against the door. To see the movement you would have believed that Desroches was the thief. "Think a little," said Antonin's father. "I know the—the person that you suspect—"

"Suspect!" cried the librarian. "I don't suspect him; I saw him commit the theft, thanks to a mirror, and put the diamonds in his pocket. This jewel-robber shall sleep in prison to-night, if he sleeps at all. But don't let us lose precious time."

"If you please," replied Leroux, "this unhappy man will sleep in his bed. Let him go and hang himself elsewhere. I know him, slightly, it is true, but we formerly had certain business affairs together. I do not wish any prosecution. Just think of the newly-wedded couple, their families and yourself appearing in the witness-box at the criminal court! And all that for a paltry five or six thousand dollars. I have not yet arrived at that point, thank Heavens! So, my dear sir, you have seen nothing, have you? It goes without saying that in the future this rascal will be deprived of shaking my hand. I am very much obliged to you."

Desroches went out of the house completely astonished. For this frankly-honest man such exaggerated mercy seemed like complicity. So, after reflecting awhile, he went straight to the police office and made his report, giving a description of the culprit, the number of the cab, as well as the address indicated to the driver. Then he went home, his conscience much lighter.

The following day, as Leroux was starting for an early morning ride, he received a visit from a detective, who presented himself armed with all the details given by Desroches. The banker clenched his fist and vowed the indiscreet librarian to all the fiends; then, becoming calm, he declared that he would not make a complaint against the thief. The detective was obliged to withdraw without even knowing the name of the jeweler who had sold the necklace. Leroux refused to give him the empty jewel-case.

"If you do not wish to prosecute, the government will do so on its own account," said the detective, in retiring.

This declaration made a cold perspiration appear on the financier's brow. But, like a strong-minded man that he was, he soon took a decision. He got into his carriage and was driven to the corner of the Boulevard and the Faubourg Saint-Martin. There he sent away his carriage and went up to the Faubourg on foot, until he reached a modest-looking house. He mounted three flights, rang at the door, and handed his card. Five minutes afterwards he was alone with the famous Coindart, formerly employed at the prefecture of police, and now at the head of the best private detective agency in Paris.

"Monsieur," he said, "in two words here is what happened to me. Yesterday I married my son. Among the guests was a certain Italian count, who was formerly associated with me in some speculations, and who has since become one of those numerous well-dressed swindlers that abound in Paris. The man's name is Calcatroni, and he has stolen the diamond necklace that I gave to my daughter-in-law."

"And you want us to follow him?" said Coindart, in taking notes.

"I want you to follow him, but, understand, I don't want him arrested. I want his arrest prevented, and I must tell you that an imbecile has put the prefecture on his track. My request must astonish you, but without entering—"

"Nothing astonishes me, sir," said the ex-policeman. "You are not the first one who has asked me to perform a service of this kind. If the public knew all it would be less astonished at seeing the police fail in certain cases. But let us return to your man. You desire that no disagreeable thing happen to him! that is understood. But do you wish to have the necklace restored to you?"

The financier reflected for a moment.

LACTOPEPTINE,

The most important remedial agent ever presented to the Profession for Dyspepsia, Vomiting in Pregnancy, Cholera Infantum, Constipation, and all Diseases arising from imperfect nutrition.

Lactopeptine precisely represents in composition the natural digestive juices of the Stomach, Pancreas and Salivary Glands, and will, therefore, readily dissolve all foods necessary to the recuperation of the human organism.

CAUTION

We regret that we are compelled to caution the profession in prescribing Lactopeptine, but very careful investigation has proven to us clearly the necessity of it. Substitution of cheap and worthless compounds are being made in many cases where Lactopeptine is prescribed.

Lactopeptine is always UNIFORM, and its effects are SPECIFIC, and no one has ever been able to imitate its digestive value. If you do not obtain positive results when you prescribe Lactopeptine, you can be sure that some substitution has been made, and in such cases it may be necessary for the physician to prescribe Lactopeptine in the original ounce package to insure certainty of obtaining the genuine article. We can confidently make this assertion, knowing the scrupulous uniformity in digestive value of every ounce of Lactopeptine.

Lactopeptine has always been kept strictly in the hands of the Medical Profession, never having been admitted in any publications but Medical Journals. It is prescribed by the most intelligent and educated physicians in all parts of the world, and there are but few physicians who have ever used Lactopeptine that will not agree with the late Prof. L. P. Yandell, when he says: "Lactopeptine is one of the certainties in medicine, and in this respect ranks with Quinine."

In the various forms of Dyspepsia, in vomiting in Pregnancy, and in Mal-nutrition of children, there is no known remedy so positive in results.

P. O. Box 1574. THE NEW YORK PHARMACAL ASSOCIATION, NEW YORK.

"That would be, perhaps, the best thing. But for myself the monetary question is a secondary affair. What I wish to avoid is an arrest; I dont want any scandal or any judicial debates. It goes without saying that the necessary credit is placed at your disposal. Above all, don't lose any time, for the other side is already at work."

Thereupon the two men took leave of each other.

That very evening, as Calcatroni came out of the opera, he stopped to light his cigar. A stranger stepped up to him and very politely asked him for a light. Taking off his hat to thank Calcatroni for the favor, the unknown gentleman said to him, "Monsieur Calcatroni, do you intend to return home this evening?"

Leroux's former partner shrugged his shoulder in hearing his name pronounced by this stranger, but he at once recovered his self-possession, and with the smile of a man who was very much amused, said:

"My dear sir, this is the first time in the last thirty years that a human being ever troubled himself about my habits. However, I don't mind telling you that in half an hour I shall be in my bed."

"That's where you make a mistake," replied Coindart. "In less than ten minutes you will be in a cab with two detectives who are waiting for you at your door. So, if you believe me, let us turn about and sleep at my house. By the way, where are the diamonds?"

Calcatroni remained perplexed for a few seconds. He had the jewels in his pocket. He finally said, haughtily: "This joke has gone far enough. To begin with who are you?"

"A fairy and a good angel, as in the 'Black Domino,'" said Coindart. "I am the confidant of your friend Leroux, who does not wish a hair of your head to fall under the prison shears. You don't believe me? Come with me and I will show you in the distance the two detectives ready to nab you."

"Let us go to your house at once," said the Italian. "We can talk better there."

They had scarcely turned the corner of the Faubourg St. Martin when Calcatroni admitted his "hallucination."

"A debt of honor," he explained. "Three thousand dollars lost at play that I must pay to-day. I put the diamonds in pawn for this sum. Leroux needn't have any fear; I will return them to him. That dear Leroux! It is very kind on his part to have spared his old chum! You will tell him how grateful I am."

Calcatroni did not sleep very well at his protector's house; but, at least, the detectives who watched for him were obliged to return without their prey.

From that moment it was an homeric struggle between Coindart and his former comrades at the prefec-

MELLIN'S

TRADE MARK

CRAIET LABORA

FOR INFANTS & INVALIDS

FOOD

The Only Perfect Substitute for Mother's Milk.

A Copy of our Book,

The Care and Feeding of Infants

will be MAILED FREE to any address.

DOLIBER, NOODALE CO.,

40-41-42-43 Central Wharf, Boston, Mass.

STEVENSVILLE MILLS.

IMPEROYAL VACUUM COOKED OATS.

IMPEROYAL VACUUM COOKED WHEAT.

M. D. STEVENS'

SOLE MANUFACTURER OF

ABSOLUTE PURITY.



HOUSEHOLD NECESSITY.

ONE MINUTE IN PREPATATION.

IMPEROYAL VACUUM COOKED HOMINY.

IMPEROYAL GRIDDLE CAKE FLOUR.

Recommended by Eminent Physicians and Chemists.

☞ Adapted to all kinds of Pastry, Bread, Biscuit, Griddle Cakes, etc., and its absolute purity and freedom from Alum, Terra Alba or any injurious ingredient, makes it a necessity in every household. No lady can afford to be without it. Sold by best Grocers.

M. D. STEVENS,

Room 18, Mercantile Exchange,

Cor. Hudson & Harrison Sts., NEW YORK.

Doctor

Cupid's

Advice



It is a full and complete diet, prepared with water only. Always uniform in quality and the most economical food available.

THOMAS LEEMING & CO., SOLE AGENTS, NEW YORK.

"OUR TWIN COMFORTS."

Two Essentials for Sound and Beautiful Teeth,



A Perfect Polisher & Thorough Cleanser

More cleanly than bristles and avoids the irritation to the **Gums**, and injury to the **Enamel**, so frequent from their use.



Conveniently Supplies the Quill and Dental Floss Indispensable for Use After Eating to Prevent Decay. Each Toothpick contains one yard Spool of Floss.

Dr. E. T. Darby of the University of Pa., Philadelphia, writes: "The two, if faithfully used, will do more toward saving the teeth than all the Tooth Brushes in America."

AT ALL DRUGGISTS.

HORSEY M'F'G CO., Utica, N. Y.

IMPORTANT

TO THE

MEDICAL PROFESSION.

Send your address to THE NEW YORK PHARMACEUTICAL COMPANY, BEDFORD SPRINGS, MASS., for Illustrative Hand-book, **FREE**, containing valuable formula, special directions, and the testimonials of one thousand physicians in favor of the great merits of

HAYDEN'S

Viburnum Compound,

IN FEMALE DISEASES.

Also, the

URIC SOLVENT,

For KIDNEY DISEASES, and complaints arising therefrom.

ture; while they tried to track their man he manœuvred to outwit them until he should find an opportunity to send Calcatroni to England. Between two alarms, Coindart went to Leroux and rendered an account of his strategems, and told him about the Italian's gratitude.

"I will call it square," said the banker, "provided he returns you my necklace."

"That is impossible for the present; it is in pawn for three thousand dollars."

"Theee thousand dollars!" repeated Leroux, raising his arm wildly in the air. "Then the lender did not look at the diamonds!"

"Are they worth much more!" asked Coindart, who appeared to be greatly interested.

"Three thousand dollars!" insisted Leroux, without hearing. "How shall I get out of it? If that miserable receiver of stolen goods wishes to sell them! Monsieur Coindart, I beg you to bring me, to-morrow morning, the name of the man who loaned the three thousand dollars."

But on the following morning it was not Coindart who called upon the financier. Calcatroni proudly sent in his card, and did not have to wait a minute in the ante-chamber. When the two men were alone and the door well closed, the Italian advanced with a firm step towards his former partner, who seemed to be confounded. Had you seen him you would have said it was Leroux who was "wanted" by the police.

"Monsieur," began the visitor, "what they say is, then, true? You are about ruined?"

"Really," stammered Antonin's father, "this language in your mouth—"

"Don't be so haughty!" interrupted the Italian, 'During a whole week I was stupid enough to believe that the remembrance of our former relations inspired your conduct towards me. I was touched by it. I understand to-day why you were so afraid of having the police look into your affairs."

"My affairs!" protested Leroux, with what little energy remained."

"This morning," continued the Italian, coldly, "I did what I had not thought of doing, considering you are an honest man—I examined the diamonds."

"Then you did not pawn them?" cried the banker, radiant.

"Pawn them? How long is it since gentlemen gave glass as security?"

Leroux fell back into his chair, trembling in every limb.

"Ah, you are not so proud at this moment! So, in order to deceive the public on the state of your affairs, you did not blush to place upon the neck of your daughter-in-law an ignoble lot of glass beads! To conceal the gulf which is about to swallow up the fortune of your victims, you began by dressing a poor young girl who was proud in advance of bedecking herself with these splendid imitations."

"I should have told her," stammered the speculator. "She would have comprehended that at the present moment. I am waiting for some returns."

"Don't say any more, sir; it is useless. In leaving here I am going to present myself before the justice of my country, which accuses me of an imaginary crime. They do not condemn a man for a few pieces of crystal. It is you who will succumb under the ridicule of the public; it is you who will be dishonored. To-morrow the crowd will besiege your office, demanding the sums deposited with you. That is what frightened you. That explains your care in preventing my arrest. It will hereafter be a superfluous case. I am going at once to the prefecture."

"Wait, I beseech you!" moaned Leroux. "What can I do to detain you?"

"I want three thousand dollars. I declared on the very first day that I needed this amount, and I don't contradict myself. If your diamonds enter the recorder's office, they will cost you more than three thousand dollars."

How the three thousand dollars were found is what I ignore. All I know is that Leroux did not find them in his cash-box. But, in fine, after long waiting Calcatroni pocketed them and went out with the prim and easy step of a man who had just accomplished an act of justice.

He took with him to post a letter from Leroux addressed to the government attorney, declaring that the necklace believed to be stolen had just been discovered behind a piece of furniture, and now reposed in its blue velvet jewel-case.

Since then the banker's affairs have grown brighter. His daughter-in-law now wears real diamonds. But Calcatroni replies, whenever any one speaks to him of his former partner and the family:

"I no longer frequent those people."

MICROBES.—"The idea that all microbes are injurious to health," says the *Sanitary News*, "is a very common one, even among those who pose for well-informed persons. The fact is that they are now believed to play a not unimportant part in the process of digestion and the transformation of food into assimilible form."

ARTIFICIAL MOTHERS.—Prematurely born and abnormally delicate infants are now supplied with artificial mothers of more than motherly tenderness. The apparatus, identical with the incubator or artificial hen for hatching chickens, is simply a large square box warmed by bowls of water beneath an inner bottom. In this, wrapped carefully in cotton, is placed the weak babe, so frail during its first few days that the open air would fatally chill it. With an even temperature and a free circulation of warm air, secure from cold and dampness, and with careful feeding, the infant thrives and rapidly acquires health.

The Standard of Excellence.

KINGSFORD'S

OSWEGO

Pure and Silver Gloss



STARCH

KINGSFORD'S

OSWEGO CORN STARCH

FOR

Puddings, Custards, Blanc-Mange, Etc.

THE PERFECTION OF QUALITY.

WILL PLEASE YOU EVERY TIME.

Always ask your Grocer for these goods.

COLDEN'S LIQUID BEEF TONIC.

ORIGINAL LABEL:
"Colden's Liebig's Liquid Extract of Beef and Tonic Invigorator."

AN INVALUABLE AID IN THE TREATMENT OF ALL CASES OF DEBILITY.

Established 15 Years. Endorsed by Scores of Physicians. Essentially Different from all other Beef Tonics. Beware of Imitations.

COLDEN'S LIQUID BEEF TONIC consists of the Extract of Beef (by Baron Liebig's process), spirit rendered non-injurious to the most delicate stomach by extraction of Fusel Oil, soluble Citrate of Iron, Cinchona, Gentian and simple aromatics. An official analysis of this preparation by the eminent chemist ARTHUR HILL HASSALL, M. D., F. R. S., and an endorsement by SIR ERASMUS WILSON, F. R. S., is printed on the label of each bottle.

Its Range of Action Embraces all Cases of Debility.

By the urgent request of several eminent members of the medical profession, I have added to each wineglassful of this preparation two grains of SOLUBLE CITRATE OF IRON, and which is designated on the label as "No. 1," while the same preparation, without Iron, is designated on the label as "No 2."

It acts directly on the sentient gastric nerves, stimulating the follicles to secretion and gives to weakened individuals that first pre-requisite to an improvement, an appetite.

I will, upon application, send a sample bottle of ***Colden's Liquid Beef Tonic*** *to any physician in regular standing. Please ask your Dispensing Druggist (if he has not already a supply) to order it. In prescribing this preparation physicians should be particular to mention* ***"COLDEN'S"*** *viz:* ***"EXT. CARNIS. FL. COMP."*** *(COLDEN). It is put up in pint bottles and can be had of Wholesale and Retail Druggists generally throughout the United States.*

C. N. CRITTENTON, Sole Agent,

115 Fulton Street, N. Y.

Please Mention the AMERICAN ANALYST.

FRENCH DISHES.

THE MEANING OF THE TERMS FOUND ON BILLS-OF-FARE.

[Translated and Explained by the AMERICAN ANALYST.]

(*Continued.*)

[NOTE.—It is not our purpose to furnish a complete dictionary of French words used in cooking and on bills-of-fare, but only to give free translations of those terms most frequently found, the full understanding of which would possibly conduce to the readers' enjoyment of the dinner table. Incidentally, also, some practical hints are given as to the composition of many of the more popular French dishes.]

Hors d'œuvres	Side-dishes.
Huitres	Oysters.
Huitres grillées	Broiled oysters.
Hure de porc farcis	Stuffed pig's head.
Jambon	Ham.
Jambon cuit	Boiled ham.
" crû	Raw "
Jarret de veau	Knuckle of veal.
Langoustine	Prawns.
Langue de bœuf	Ox tongue.
Langues de mouton aux petits pois	Sheep's tongues with green peas.
Langue de veau à la sauce d'anchois	Calf's tongue with anchovy sauce.
Lapin	Rabbit.
Lard	Bacon.
Légumes	Vegetables.
Lièvre	Hare.
Longe de mouton	Loin of mutton.
Longe de porc	Loin of pork.
Longe de veau	Loin of veal.
Longe de veau à la Macedoine	Loin of veal with vegetables.
Maquereau	Mackerel.
Marrons	Large Italian chestnuts.
Mayonnaise de homard	Mayonnaised lobster.
Menu	Bill of fare.
Merluche	Haddock.
Morue	Codfish.
Moules	Mussels.
Moules étuvées	Stewed mussels.
Mouton	Mutton.
Navets	Turnips.
Noisettes	Hazelnuts.
Noix de veau à la financière	Veal fries with financiere sauce.
Œufs à la coque	Boiled eggs.
" à la gourmand	Eggs with crabmeat or smoked salmon.
" au jambon	Ham and eggs.
" au lard	Bacon and eggs.
" aux pointes de asperges	Scrambled eggs with asparagus points.
" brouillés	Scrambled eggs.
" brouillés au jambon	Scrambled eggs with ham.
" " aux truffes	Scrambled eggs with truffles.
" durs	Hard boiled eggs.
" farcis	Stuffed eggs.
" frites	Fried eggs.
" perlés	Pearled eggs.
" pochés	Poached eggs.
" pochés à la chicorée	Poached eggs with dandelion.
" " à l'oseille	Poached eggs with sorel.
" sur le plat	Fried eggs.
Oie	Goose.
Omelettes soufflées à la Viennoise	Omelet, with chopped leeks.
Omelettes aux confitures	Omelet with stewed fruit.
Pain de chevreuil aux champignons	Venison loaf with mushrooms.
Pain de faisan à la Royale	Minced pheasant with truffle sauce.
Pain de foies gras à la Toulouse	Goose liver pudding with white sauce.
Pain de foies gras aux truffes	Goose liver pudding with truffles.
Pâté de chapon	Capon pie.
" " faisan	Pheasant pattie.
" " pigeon	Pigeon pattie.
" " veau	Veal pie.
" froid de canard sauvage,	Cold wild duck pie.
Petits pâtés alouettes	Lark pattie.
" " au jambon	Ham pattie.
" " aux grives	Game pattie.
" " " huitres	Oyster pattie.
" " " truffes	Truffle pattie.
" " d'anchois,	Anchovy pattie.
Petit pain	Roll, or if with meat sandwich.
" " à la langue	Tongue sandwich.
Petits pâtés	Patties.
Perdreaux à la Perigord	Partridge with truffles.
" " Princesse	Pot roasted partridge with truffle sauce.
" " Regence	Roasted partridge with brown sauce.
" aux choux	Pot roasted partridge with cabbage.
Perdrix	Partridge.
Pieds de mouton	Sheep's trotters.
Pigeon	Pigeon.
" à la crapaudine	Broiled pigeon.
" aux olives	Pot roasted pigeon with olives.
" rôti	Roast pigeon.
Pintade	Guinea fowl.
Pintade rôtie, à la broché	Roast guinea fowl.
Pintade sautée aux champignons	Guinea fowl fricasseed with mushrooms.
Poire	Pears.
Poisson	Fish.
Poitrine de mouton	Breast of mutton.
Poitrine de mouton en ragout	Breast of mutton stewed.
Poitrine de veau, à la soubisse	Breast of veal and onions.
Pomme	Apples.
Pommes de terre	Potatoes.
" " " à la creme,	Potatoes in cream.
" " " " Duchesse	Small balls of potatos and flour fried.
Pommes de terre à l'Italienne	Potatoes in herbs and butter.
Pommes de terre à la maitre d'hôtel	Potatoes stewed in beef broth, butter, parsley and lemon juice.
Pommes de terre à la Parisienné	Small round fried potatoes.
Pommes de terre Anna Lyard	Potatoes cut thin, left together and fried brown.
Pommes de terre au four	Baked potatoes.
" " " en purée	Mashed potatoes.
" " " frites	Fried potatoes.
" " " Macquaire,	Potatoes cut in cubes and fried.
" " " pailles	Fine cut potatoes fried.
Pommes de terre rôtie au four	Sliced potatoes roasted.
Pommes de terre sautées	Potatoes stewed in butter.
Popiettes de chevreuil	Venison in slices larded.
" " veau	Veal roll.
Porc	Pork.
Porc roti	Roast pork.
Porc salé	Corned pork.
Potage	Soup.
" à la crécy	Carrot soup.
" " crème de riz	Rice soup.
" " Dubarry	Asparagus soup.
" " Duchesse	Chicken soup.
" " Julienne	Vegetable soup.
" " parmentier	Potato soup.
" " Princesse	Chicken dumplin soup.
" " printanière	Young vegetable soup.
" " puree d'asperges,	Asparagus soup.
" " " des carottes,	Carrot soup.
" " " de lentilles	Lentil soup.
" " " de pois	Pea soup.
" " St. Germain	Pea soup.
" " Windsor	Gravy soup with Madeira.
" au tapioca	Tapioca soup.
" aux écrevisse	Crawfish soup.
" ris de veau	Calf's sweetbread soup.
Pot-au-feu	French beef soup.
Pouding à l'Imperatrice	Champagne jelly with fruits.
Pouding à l'Imperial	Cream and pineaple.
Pouding à la Richelieu	Rice with fruits and liqueur.
Pouding à la Traunsdorf	Rice with raspberry sauce.
Poulet à la Perigueux	Roast fowl with truffles and dumplings.
" au riz	Boiled chicken with rice.
" fricassée	Fricasseed fowl.
" froid	Cold chicken.
" grille	Boiled fowl.
" rôti	Roast fowl.
Prunes	Plums.
Punch à la glacé	Roman punch.

(*To be continued.*)

BURNETT'S PERFECTLY PURE HIGHLY CONCENTRATED Standard Flavoring EXTRACTS

THE superiority of these Extracts consists in their

PERFECT PURITY AND GREAT STRENGTH.

There is no subject which should more engross attention than the purity of the preparations which are used in flavoring the various compounds prepared for the human stomach.

They are not only true to their names, but are prepared from fruits of the best quality, and so highly concentrated that a small quantity only need be used.

JOSEPH BURNETT & CO., Boston, Mass.



ALTHEA.

The greatest hygienic face stimulant. Is the grandest preparation for the complexion ever discovered.

PRICE, $1.00 PER BOTTLE.

MANUFACTURED BY THE

ALTHEA COMPANY

25 West 125th St., N. Y.

Ask your druggist for it, or send direct to us.



TABLE LUXURY.

DINNER DECORATIONS OF THE PRESENT PERIOD.

Luxury in modern table arrangements has no limit. Twenty-five years ago a dinner, even in the house of a wealthy man, was a plain affair. Handsome damask, solid silver and good old china there was in abundance, but every thing pertaining to the meal was on a simple plan. One man, or more frequently a single maid servant, was deemed sufficient to wait at table. Grand dinners, elaborate banquet suppers were served by caterers who sent their own men to wait at them. Not infrequently is the caterer and his relay of servitors now called upon to prepare and serve the feast even in great houses when the thousand and one dear friends are to be entertained in hospitable fashion. But the day is gone when the caterer is the autocrat of table ethics and table modes. Many a luxurious mansion is so well equipped, in these latter days of vast wealth, with trained and clever servitors, as to make the professional caterer unnecessary on any occasion. All the refinements of art are now employed, to make the table delightful to the sight. Ingenuity has been exercised in every direction to devise implements that would elevate the art of eating from one of humble physical necessity to a cultivated accomplishment. There's a fork for every variety of food; a spoon for everything where a spoon can be used. There are glasses innumerable. Stupid would be that individual who mistook the receptacle for claret for that of champagne, or was puzzled to know the use of the tiny liqueur or cordial goblet. The man who laid a bone on the cloth now-a-days instead of depositing it in the narrow, long dish before his plate, would commit a grave breach of etiquette. A most desirable adjunct to table appointments is this same bone dish. By its use the linen is kept free from grease spots and the eyes are not offended by unsightly piles of refuse from the plates. Into it should go not only bones, but all the discarded bits of food. Spoons have taken on themselves new and lovely shapes. For Roman punch dainty ones in the form of a lotus blossom are provided. Asparagus salad has its own fork. It is a broad implement with four heavy tines and a short handle. To olives alone is dedicated the prettiest of oval-shaped silver dishes. Sometimes olives are served in little china dishes, across which has been passed each way a narrow ribbon, which, when it is tied in a natty bow in the center of the dish, divides it into four parts. The ribbon corresponds in hue with the flowers and other table decorations. The same arrangement is used for bonbons, candied rose leaves, violets, cheese or anything which is to be passed between the courses. Salads of various description, and numerous dishes that might be classed as entrees, are offered at many tables between the regular courses. They are served in daintest fashion, and but a mouthful of each is taken. The mission of such as are set out in utensils of precious metal or in fragile, be-ribboned ware is first to enhance the appearance of the board. A further object is in all these small dishes, whether things of beauty or not, of which guests partake between soup and fish, roast and game. They break the monotony of waits, and the time passes quickly until the new course appears. No law will govern flower decorations this winter. The arrangement of flowers will be according to fancy. Scarfs of satin and plush will be discarded by those who keep apace of fashion's latest dictates. Linen will be plain, but fine, as if loomed in fairy land. It will not be spun in flowers or geometrical designs but unmarked, as one of our great grandams best pocket handkerchiefs, and, like that, hand hemstitched. The piece of furniture known in England as a "dinner-wagon," and in France as an "*etagere*," has obtained recognition on this side of the Atlantic as a desirable accessory. It consists of a series of open shelves on which are placed the extra napkins and serviettes to be used. The first heavy napkin is taken away and a more delicate one brought with the Roman punch, or whatever is offered in its stead. With the game comes a fresh one, and when the dessert arrives so does a new napkin. The "*etagere*" holds the salad bowls, spoons and plates, the dessert dishes and finger bowls. The jellies for the meats, relishes, radishes and celery come on the vehicle which our British friends designate by the cumbersome name of "wagon." A handsome china dish in three compartments is sometimes used for the cheese, butter and biscuit passed with salads.

WARMING THE HOUSE.

SOME SCIENTIFIC, ECONOMIC AND PRACTICAL SUGGESTIONS.

(*Continued.*)

The direct application of steam heating on a large scale has been made at Lockport, N. Y. About 200 houses in the city are heated from a central supply through about three miles of piping, radiating from a boiler house, which contains two boilers, sixteen feet by five feet, and one boiler eight feet by eight feet. These boilers are fired during the winter to a pressure of 35 pounds to the inch, with a consumption of four tons of anthracite coal in twenty-four hours. The boiler pressure of 35 pounds in winter and 25 pounds in summer, is maintained through a total length of three miles of piping up to the several points of consumption, where there is a cut-off under the control of the consumers. The first 600 feet of mains from the boilers are four inches in diameter. There are 1,400 feet of 3-inch pipes, 1,500 feet of 2½-inch pipes, and 2,000 feet of 2-inch pipes. The supply pipes from these mains to the houses are one and a half inches in diameter, and within each house three-quarter inch pipes are used. In addition to the cut-off tap from the main, under the control of the consumer, there is a pressure valve regulated to a five-pound pressure under the control of the company, and beyond this is an ingeniously constructed meter, which indicates, not only the total consumption in cubic feet of steam, but also the quantity of steam in each compartment. At each 100 feet of main an expansion valve, like an ordinary piston and socket, is inserted, allowing an expansion in each section of 100 feet of one and three-quarter inches for the heat at 35 pounds pressure. No condensation occurs in the mains. They are covered with a thin layer of asbestos paper next the iron, then a wrapping of Russian felt, and finally manilla paper, and the whole is encased in timber, bored out three-quarters of an inch larger than the felt-covered pipes, and laid along the street like gas pipes.

The distribution of heat in the apartments is by means of radiators, consisting of inch pipes, thirty inches long, placed vertically either in a circle or as a double row, and connected together at top and bottom, with an outlet pipe for the condensed water, which escapes at a temperature a little below boiling, and is sufficient for all the domestic purposes of the house, or it may be used as accessory heating power for horticultural and other purposes. The steam has also been applied at a distance of over half a mile from the boilers for motive power, and two steam engines of ten horse and fourteen horse-power are worked from the boilers at a distance of half a mile, with but a slightly increased consumption of fuel. The laid-on steam is also used for cooking purposes, for boiling, and even for baking. As in the case of gas supply, the steam supply company lay their pipes up to the houses, the consumer paying for all internal pipes, fittings and radiators. In a moderately sized eight-roomed house the expense of these amounted to $150, and in larger houses, with costlier fittings, to $500. Wrought iron pipes, 1½ inch bore, are the most economical for steam, as they afford a larger heating surface with small area. In heating living rooms by steam, the high temperature of the pipes affords one of the advantages of an open fire, viz., warmth by radiation, and combines with this the advantage, which hot water pipes possess, of directly warming the air.

(*To be continued.*)

KITCHEN REFORM.

MEDICAL PROFESSORS IN COOKING SCHOOLS.

It is a notorious fact that our kitchens are the strongholds of ignorance, prejudice, irrational habits, and mental vacuity, with the result that Americans suffer beyond any other people from wasteful, unpalatable, unhealthful and monotonous cookery. Acquiescence in this state of things as something permanent and irremediable is no longer possible. The time has arrived when the advance of intelligence and the spirit of improvement must invade that citadel of stupidity, the kitchen, and banish from it all degrading associations by the presence of trained women who have made the work there carried on a matter of serious study. Considered from the standpoint of morality and hygiene, which, in some respects, seem almost one and the same thing, there is no reform movement that appeals so directly to the large-hearted physician as this present effort going on among us to secure rational cookery and authoritative knowledge of facts and rules in dietetic science. Why should not the doctor have a chair in the cooking-school? His place in nature as prophet, lawgiver, guide, philosopher and friend, makes him at home wherever help is needed. To the highest style of man there is neither great nor small, necessity being the only gauge of things ideal and non-ideal. The world, like Ajax, prays for light. What we shall eat, and how, are ever-recurring problems. Upon their wise solution depend, to a great extent, the health and happiness of mankind. The experience of the past upon this subject, a hopeless, unclassified mass—wheat and chaff—about as valuable as uncut gems from a mine, is the natural inheritance of all women interested in the ennoblement of domestic life. But other times require other manners. What is the best food, and how best prepared for nineteenth century man in America? Bewildered women are uttering the old cry: "Come over and help us." Have you sound knowledge upon the science of common things? Do you wish your fellows well? Then, friends, let us go!—*Med. Jour.*

SHERIDAN'S LAST NIGHT.—"Without oxygen no life" is in some respects a more scientific aphorism than the famous dictum of Moleschott, "Without phosphorus no thought." A contemporary remarks that General Sheridan's illness will be noteworthy for the hard fight made by his doctors against the disease by means of oxygen. Over and over again, when the suffocative paroxysms which seized the General came on hand he all but expired, a bag of oxygen placed over his face kept life in him, and enabled him to fight the dread foe.

American Analyst,

Published on the 1st and 15th of each month.

Subscription, - - - - - - $1 per year.
Single Copies, - - - - - - 5 cents.
Subscriptions to foreign countries, - $1.50.

Remit by Express Money Order, Draft, P. O. Order, or Registered Letter.

Advertising rates on application.

EUROPEAN AGENCIES.

On file at "American Exchange," 449 Strand, London; and American Exchange," 35 Boulevard Des Capucines, Paris..

THE ANALYST PUBLISHING CO.,
Publishers.

H. LASSING, M. D., } ***Editors.***
T. P. McELRATH, }

No. 19 Park Place, ... New York.

NEW YORK, OCTOBER 15, 1888.

CORRESPONDENTS AND EXCHANGES.

Please direct all business communications to

THE AMERICAN ANALYST,
19 Park Place,
New York.

ANSWERS TO CORRESPONDENTS.

RACHEL.—There are several kinds of good stationary washtubs made. We have described one kind in a previous issue.

"HOOSIER," Elkart, Ind.—Your question as to proper treatment of the hair was answered in our issue of October 1st, page 309. The advice therein contained embodies all there is on the subject.

BEER.—Thanks for calling our attention to the beer containing salicylic acid. We have several under analysis now. One very popular Milwaukee brewery is using it again. We shall attend to them.

W. L., Pottsville, Pa.—Mr. Kennan, in his *Century* article, gives one a good idea of the enormous size of Siberia by stating that its territory would contain the United States, including Alaska, with all the States of Europe except Russia, and there would still be 300,000 square miles to spare.

BAKER.—The most ancient bread of which samples have been preserved for modern information, is probably that discovered in a Pompeian bakery. It is in round loaves weighing each when fresh probably about three pounds. Similar bread apparently is made to this day in Naples and that vicinity.

STAR GAZER.—The velocity of meteorites is something wonderful. While the most rapid cannon shots scarcely attain a velocity of 600 yards a second, meteorites are known to penetrate the air with a velocity of 40,000 or even 60,000 yards per second—a velocity which raises the air at once to a temperature of 4,000 to 6,000 degrees centigrade.

F. J.—The use of paper in the industrial arts is steadily increasing. A large portion, even, of the beautiful bronze ornaments and statues seen in public places and offered for sale in stores, is made of a composition, the principal element of which is paper or fibre. A man to-day can wear paper shoes and clothes, eat from paper dishes with paper knives and forks served upon a paper table, sit upon a paper chair, sleep in a paper bed, in a room carpeted with paper, wash in a paper tub or bowl, live in a paper house, ride in a paper carriage or car, sail in a paper boat, make a fortune on paper, and yet the industry is only in its infancy.

BAY RIDGE, L. I.—We remember reading recently in a Washington paper that the yellow fever epidemic at Jacksonville had a romantic origin. According to the chronicler, the man who brought the fever to Jacksonville was a lover. His sweetheart was in Tampa, and Tampa was isolated on account of yellow fever. But he managed to pass the cordon, and steal an interview with his love. Then he came back to Jacksonville and brought yellow fever with him. Surgeon-General Hamilton is claimed as authority for this short history of the spread of yellow fever. It would be another confirmation of the wisdom of the sage who once declared there was a woman at the bottom of every mischief, were it not for the inconvenient fact that yellow fever is not regarded by medical experts as communicable from a patient, but only from exposure to the same conditions as those which originally caused it.

MEDOC.—*What is plastered wine, and is it injurious to health?* "Plastering" wine consists in adding sulphate of lime after the first fermentation, or while the wine is in the vat. It is said to cause increased fermentation and a brighter and more permanent color in the wine, which will also keep much longer. The objections are that the chemical changes render the wine injurious to health, because the bitartrate of potash contained in normal wine when plaster is added, forms an acid sulphate of potash, and precipitates an insoluble bitartrate of lime varying according to the amount of alcohol present. In such wine there is also found sulphuric acid in a free state, as well as sulphate of magnesia. The effects of such wines on the consumer are to produce thirst, dryness in the throat, and other functional troubles and mechanical injury. It should be prohibited by law.

MORE CROCKERY POISONING.

The claim made some months ago by the AMERICAN ANALYST of the possibility of lead poisoning from the "crazing" of glazed crockery ware has received frequent corroboration since the publication of the articles relating to that subject, our domestic crockery trade journals to the contrary notwithstanding. What we asserted was that china and glazed crockery are enameled with a preparation consisting largely of litharge, or red oxide of lead, a salt of lead very soluble in fat acid and especially in butyric acid. All fatty foods contain this acid, which insinuating itself in cracked enamel, takes up the lead to be carried with the food into the eater's system. The London *Sanitary Record* calls attention to some cases of poisoning of this character that occurred recently in England. It appears that in reporting on the Alcester rural sanitary district, Dr. Fosbroke, the medical officer of health, lately recorded some cases of lead poisoning by wines made in the ordinary glazed earthenware pans that came under his notice. Members of two families residing at Inkberrow were attacked by unmistakable symptoms of lead poisoning. On inquiring, Dr. Fosbroke ascertained that the persons affected had partaken of some home-made wine, though not by any means in large quantities. This wine, he learned, was made from black currants and plums, which in the course of preparation were allowed to ferment in a glazed earthenware washing pan. This pan showed corrosion, and there seemed no doubt that the lead which is used in the "glaze" had been taken up by the wine and imbibed by the sufferers. The *Sanitary Record* recommends that the fermentative process should be carried out in wooden vessels, and the ordinary glazed earthenware pans be especially avoided.

THE LOCO WEED.

This is the name of a plant which has enjoyed considerable notoriety from the fact that popular superstition has accredited it with the power of producing insanity, as is implied in the name originally given to it by the Mexicans, "*herba loca*," "insane herb." Many writers of romance have woven wonderfully pathetic stories around the alleged fact that some jealous maiden has prepared a decoction of this herba loco, and beguiled her victim into drinking it, after which he becomes insane, or dies a raving maniac. Mr. James Kennedy, Ph. G., in a paper read before the Texas Pharmaceutical Society, has pricked the bubble. After minutely describing the plant, and various analyses made of it, he gives a report of numerous experiments made with it, all of which proved conclusively that the much vaunted poison of herba loco is a myth, and that the plant is perfectly harmless. It is interesting, however, to note what an amount of apparent strong corroborative evidence can be found for any popular superstition, Mr. Kennedy having found that every farmer in Texas who knew the plant was prepared to testify that it would poison cattle who eat it. Mr. Kennedy clearly proved that cattle eat it freely, and that the only ill effects, if any, resulting are those which follow over-feeding on green fodder.

SCIENTIFIC FRAUDS.

A scamp was arrested over in New Jersey recently for misusing the United States mails in carrying on a fraudulent business. He called himself a doctor, and was in the habit of preparing pretended analyses of chemical preparations for the manufacturers or patentees to have published in corroboration of their claims. For a fee he would furnish a favorable analysis of anything. The name of the article was all that he required—besides the fee—as a basis of his analysis, for he had no laboratory, made literally no analyses whatever, and was not even a chemist. In a word, he was a consummate fraud, and would doubtless have been punished as such, for he confessed his deceitful practices, had not his counsel been shrewd enough to plead asininity in his behalf, and by showing him up as being too contemptible for punishment, secured his discharge. The interesting feature of the matter is the circumstance that the fellow had down to the time of his arrest enjoyed quite a profitable business. His clients were numerous, and his "certificates" are probably still appearing in substantiation of advertisements of articles claiming to be in every respect of first-class quality. It seems impossible that the persons who purchased these certificates could be ignorant of their utter worthlessness! Such men as this pretender are the jackals of trade who make imposition practicable by concealing it under a cloak of apparent genuineness. The harm they do extends further, however, in the weakening of public confidence as to the value of true scientific endorsement. When every quack can fill the public press with laudatory certificates of his wares, written and signed, apparently, by chemical experts, the reading public soon learns to regard all certificates as partaking of a uniform quality of worthlessness. The fact is, the same rule applies to the probable worth of expert endorsements of this kind as to that of any other marketable commodity, and that is, the genuine article can always be distinguished by the brand it bears. No reputable chemist will lend the endorsement of his name to dishonest pretenders, and no genuine manufacturer will risk his grasp upon public confidence by seeking the corroboration of any but a chemist of unimpeachable reputation. The strange thing is that well-meaning people are so often oblivious of so self-evident a proposition.

A SERIOUS ADULTERATION EVIL.

Judging from the exultant tone of the *Produce Exchange Bulletin* of this city, the victims of the unconstitutional oleomargarine restriction seem to be having their revenge in the growing disfavor which adulteration is attaching to American dairy products made for foreign consumption. English farmers and others are combining to protect themselves against the unequal competition of cotton seed oil, rancid butter and other materials now being sent from this country in immense quantities and sold abroad as cheese. With no Federal law or State enactments of any force regulating its manufacture or sale, the dishonest dairymen have a complete monopoly of and *carte blanche* to adulterate their products and to swindle both home and foreign consumers. Oleomargarine has been controlled, restricted and fully dentified from the maker to the consumer throught the

Federal tax law and numerous statutes in the States and in Europe, so that the bulk of it must be sold and consumed on its merits. With honest butter and cheese, however, the case is entirely different, and producers and sellers can swindle and cheat to their hearts' content, without fear or danger from either laws or home dairy officials, who could, if so disposed, make it more difficult for dairymen to practice their now open deception. The Liverpool *Post* and other daily papers show that England, which has always been the easiest and largest victim of American dairy dishonesty, is rapidly developing a sentiment that will soon demand and enforce laws similar to, if not more severe and stringent than, those regulating the sale of oleomargarine. Justice and honesty demand that butter, butterine and cheese should all be kept under the supervision of State authorities, and from recent developments it is quite likely that in England this will soon be attained.

BOGUS CHAMPAGNES.

Our generally conscientious neighbor, the *Mail and Express*, allowed its editorial columns to be utilized recently for advertising the maker of an artificial champagne in Germany, who is desirous of securing the services of an agent in the United States. The ostensible reason for publishing the communication was that it described a new and useful invention. The idea, however, is not new, and so far from being useful that the sooner the law stops the nefarious business of sophisticating wines the better will it be for the health of our community, for the cause of temperance, and for the honest wine producers in this country. For many years several firms in this city have taken common cheap Rhine and California wines, reduced them with twice or three times their bulk of water, added spirits, tartaric acid, sugar and carbonic acid gas, and then, under various fancy labels, and sometimes with audacious forgeries, have foisted this trash upon the market to be sold by unscrupulous dealers for genuine champagne. Even if such an imitation as the article described could be made, it opens a wide door for all kinds of fraud and deception. This country can and does produce genuine champagne of as good quality as that which is imported. We need no imitations.

AERIAL VEGETATION.

Travellers and fishermen are allowed wide privileges in the matter of curious narratives. For example, a telegraph wire is the last thing one would expect to support vegetation of any kind, yet a traveller in Brazil writes to a German horticultural journal describing a crop of mistletoe which he found clothing the wires not far from Rio Janeira. At a distance, he says, the wires appeared fringed with what he supposed were the leavings of a recent flood. But a perception of their height soon removed this idea, and upon examination the fringe proved to be composed of thousands of little mistletoes, firmly fixed to the wires from which they depended. Many species of this family flourish in Brazil, and some of them, called "bird weeds" by the people, thickly infest fruit trees and other cultivated plants and bear large berries, which are greedily devoured by birds. These seeds are deposited on the telegraph wires by birds and quickly take root, and, although the plants perish, naturally, before very long they are succeeded by others, and the curious mistletoe fringe is perpetuated.

HUMAN CONDUCTORS.—A California paper says that a party who ascended Mount Lassen recently became electrified, the hair on their heads standing straight out and sparks of electricity flying from the ends of their noses and fingers. The phenomenon was occasioned by an electrical storm.

INFANTS' AND INVALIDS' FOOD.

A CONTRIBUTION TO THE LITERATURE OF THE SUBJECT.

BY FRANCIS WYATT, PH. D.

Thirty or forty years ago the most profound scientific thinkers would have been sorely puzzled to define, with any degree of accuracy, the nature of the essential elements of food, and it is only in the past decade that any serious attention has been paid by physiologists to this branch of chemistry. By what ingenious processes and mechanical contrivances; by what patient, delicate and intricate researches and experiments our present knowledge has been attained, I shall not attempt to describe. Suffice it that they have constructed for us a positive and well-recognized science, and dispelled forever our ignorance and superstition. As I have already explained, and as most people are now beginning to understand, there are really only two functions performed by our food. The first and most important is that of maintaining our animal heat and furnishing us with motive power, while the second consists in repairing the wear and tear which takes place with every movement of our bodies. Each of these purposes demands a food for itself. In the one there must be no nitrogen, while in the other that element must abound. Thus, for example, in starchy, saccharine, gummy or other carbonaceous foods, the carbon combines with the oxygen we inhale and gives rise to an internal combustion; while in fibrine, albumen, caseine, and other nitrogenous foods, the nitrogen has such little affinity for oxygen that they are guarded against combustion, and being thus preserved, act as reconstituents of muscle and flesh. For the purposes of lucidity it may, perhaps, be well to divide up these two great classes of foods into groups:

Flesh and muscle formers:—1st, Nitrogenous proteids. 2d, Nitrogenous non-proteids.

Heat givers:—3d, Carbo-hydrates. 4th, Hydro-carbons or fats and oils.

The ever-varying composition of the proteids has caused them to be divided into two classes, both containing sulphur. The first are known as "albumenoids," and, besides having more carbon and less nitrogen, they are easily soluble in the gastric juices. The second are called by general consent "gelatinoids," and as they contain less carbon and more nitrogen, and are much less soluble than the albumenoids, they are presumed to serve the purpose of forming those portions of our anatomy which are subject to the slowest transformations, as, for instance, the bones.

The principal albumenoids may be briefly stated as:

Soluble in cold, but coagulable in hot water:—The raw albumen of eggs; the vitelline, globuline and Hœmoglobine of blood.

Soluble in water and not coagulable by heat:—Caseine of milk, legumine of vegetables.

Insoluble in pure water but soluble in very dilute hydrochloric acid:—Fibrine of blood and of gluten, musculine of muscle.

Soluble in alcohol:—Glutine of gluten.

Soluble in dilute hydrochloric acid:—Cooked or coagulated albumen of eggs, cooked musculine.

In chemical composition, as in actual nutritive value, the whole of these bodies are practically identical; so much so, that it is a rule in analytical operations to apply the same calculations to all of them when quantitating their presence in an organic compound or food.

The chief "gelatinoids," or, "non-proteids," are tyrosine, creatine, creatinine, carnine, xanthine, hypoxanthine, uric acid and urea, and since they have been definitely shown to have no value as nutrients, it is inferred that they are destined to remain dissolved in the circulating fluids, and that some of them are repeatedly oxidized in the blood before being finally ejected. The substances included in the category of carbo-hydrates are principally starch, sugar and dextrine, while the hydro-carbons are the fats, oil and butter. The part they play in the economy is that of fuel, and it is at their expense that we perform all our physical and intellectual labors When commencing these essays I explained that they were not submitted as physiological discussions, but were to contain the results of my laboratory investigations. I have wandered away, perhaps, from the path I had intended to follow, but have done so because I have found in a long and varied experience, that the results of an analysis are always more clear, when those for whose benefit the analysis is made have previously acquired some elementary knowledge of the substances to which their attention is directed. Thus, for example, if I report upon a food which contains ten per cent. of albumenoids to a man who has no knowledge of the significance of that word, I am casting no "bread upon the waters," but merely "throwing pearls before swine."

Proceeding now without further digression, I will direct attention to some prominent preparations actually being sold in this country as meat or beef extracts, withholding, for obvious reasons, the names of the manufacturers. If it be generally allowed (as I suppose it is) that we take meat as the principal article of our daily diet in order that it may reform wasted flesh and muscle, I assume that such meat should possess the faculty of returning, in our economies, to its primitive state. To do this it is essential—*a sine qua non*—that it should not be deprived during the cooking process of any particle of its valuable ingredients. If such deprivation take place—if anything be lost or abstracted—there will be a corresponding lack of aptitude to reassume the necessary forms upon which depend its beneficial action.

To illustrate this, I may refer to albumen as beyond all question the most important constituent of flesh, and reiterate what I set forth at the commencement of this article, *i. e.*, that it is coagulable by heat and absolutely insoluble in boiling water. When it is desired to obtain a clear *bouillon* of beef, or a *consommé*, it is customary to *strain* the boiled liquor to deprive it of scum and residue. The straining process results in our drinking a fluid which, while it may certainly possess some stimulating properties, and be of value in certain cases of feeble digestion and where there is a lack of pepsine in the gastric secretions, has no more nutritive power than a cup of coffee. The scum was the albumen, the residue was the fibrine, and the bouillon itself contains naught but the gelatinoids or non-proteids, which I have already sufficiently described. The well-known extract of beef called "Liebigs," is shown by my analysis to be practically nothing more than a highly concentrated and pure bouillon, and there is not a physician or a chemist in the world who is unaware of the utter worthlessness of such materials for any other than flavoring or perhaps slightly stimulating purposes.

No words could possibly exaggerate the importance of this fact to the public, and especially to the invalid; for, as we all know who have studied the subject, our nerve tissues are entirely dependent upon albumen for their alimentation, and our blood, in order to be healthy, must contain of it no less a proportion than 7 per cent. Take away this precious ingredient from our daily food, or supply it in insufficient ratio, and we should soon lose the faculties of thought, sight, taste, touch and smell. To the physician who prescribes a meat extract or compound for a suffering patient, or to the sickly traveler or invalid, dependent upon their virtue for very existence, it is a matter of the first importance that there should be present in the food supplied a sufficiency of *all* the elements, proteids as well as non-proteids, in the same form as they would exist in the flesh from which they are said to be produced.

How far the annexed preparations fulfil the necessary conditions, either from a chemical or physiological standpoint, is a question that I may safely leave to the judgment of those who have had sufficient patience to follow me thus far. I may, however, venture to commend my figures to the careful attention of our medical men, and shall be very happy to furnish, if applied to privately, any further details from my agenda.

100 Parts of Each Product as Purchased in the Open Market Contain:

	Stimulating and Flavoring Qualities.	Nutritive Value.	Preservative Agents or Antiseptics.	Mineral Matter and Phosphoric Acid.	Nitrogenous Bodies. Non-proteids.	Albumen, Artificially Added.	Albumenoids of Meat.	Water.
No. 1. *Liebig's Original*...	Excellent.	None.	None.	20.70	59.90	None.	None.	19.40
No. 2. Chicago.....	?	?	20 per cent. of its own weight of comon salt	41.70	35.95	None.	4.30	18 05
No. 3. Chicago.	?	?	Borax, Glycerine, Alcohol.	1.22	9.55	12.95	None.	72.38
No. 4. New York.....	Good.	Good.	None.	0.88	6.22	None.	14.30	78.60
No. 5. Canada.....	Excellent.	Good.	None.	12.00	36.00	None.	19.40	32.60

(To be continued).

MILK AS A BEVERAGE.

A NEW AND GROWING TRAFFIC IN THE METROPOLIS.

A street-trade that has grown up almost entirely within three or four summers past, and has now become quite prominent in the lower part of the city, is the sale of milk and buttermilk by the glass. An ingenious vehicle has been devised for the business; a one-horse wagon, hung very low on its axles—almost to the ground—with boxed-in spaces along the sides for deep earthenware crocks and ice surrounding them; a narrow free space in the centre for the one or two boys who serve customers; a couple of little shelves to place glasses upon; and an oil-cloth cover over all. Sweet milk sells for 5 cents and buttermilk for 3 cents per glass. Both are good, the former ranking well above the ordinary boarding-house variety of the lacteal fluid in its per centage of cream, and the latter being fresh and well-flavored. Some of these vehicles are kept moving slowly to catch casual trade, but others have established locations and regular customers. One, that may always be found on Exchange Place, near New Street, frequently has Russel Sage, a millionaire, for a patron, and indeed many of the elder brokers who know the value of keeping their heads cool and their judgment clear in business hours, have taken to milk drinking. Some of the young men too have discovered that milk, the morning after "a night with the boys," when the stomach rebels against solid food, is quite as soothing and restorative as clam-juice, and much more nutritious. It is no uncommon thing to see ranked up before the milk wagon, side by side, a solid old millionaire capitalist, a porter, a dashing young broker in gorgeous attire, a messenger boy, a clerk, bare-headed and with a pen over his ear, a lady, and a boot-black. At the prices the milk is sold, its vendors must be making clear, at least 150 per cent. upon it, and as there is so large and increasing a demand for it, their business is probably one of the most profitable and promising of the small industries of the town. Not alone is the street trade in milk so much, but the use of milk as a beverage in place of liquors, wines, and beer, is steadily increasing. It is not long since that the only use for milk in a New York bar-room was for making a "milk-punch," or that unique tipple, once said to be favored by the clergy, "gin and milk," or some other compound of strong liquor. But now no bar-keeper is surprised to hear a customer demand a plain glass of milk. He may deal out, along with the harmless beverage, a look of sadness and mild reproach, and, if the customer's nose is particularly red, may require to have the order repeated to him, but the demand, even when insisted upon, does not shock him as once it would. In some of the best saloons, buttermilk is now kept, in addition to sweet milk, and is much favored by dyspeptics While it is undeniable that milk is very nutritious, so much so as even to support life well in an adult of active habits, without the addition of any other food, it is also true that it is very apt to induce, in many persons, bilious conditions. Especially in those of sedentary habits it is likely to have this effect. There are two things however that will counteract this tendency, in very great measure, if not altogether. One is the stirring of a little pinch of salt into each glass of milk; the other, the addition to the milk of one-third, or even one-fourth of its volume, of either seltzer or vichy water. No one who adopts milk as a beverage should neglect using one or the other of these precautions.

FIRESIDE PHILOSOPHY.

HOW TO TRIM A LAMP WICK.

If a lamp wick is trimmed by shears, cutting it across just below the charred part, one end will almost certainly be left higher than the other. In such a case the wick cannot be turned up enough to give much light, because the higher end of it will begin to smoke before the remainder of it gives out one-quarter of the light that it should. If the wick is cut straight across, the flame will be irregular. This kind of a flame is caused by inequalities of combustion at the sides and ends of the wick. To cut a wick exactly square across is almost impossible, even if it were best; and a flame with a low centre and a tall, flaring, smoky horn on each end is a bad flame. It is bad for the lamp chimneys and for the eyes No lamp which has such a flame is properly trimmed. If one tries to avoid the horned flame by rounding off the ends of the wick, an imperfect flame will result. This flame may not crack chimneys, but it will give out but little light. It shows an honest attempt to trim the lamp properly, but an unsuccessful one. To secure a good flame the lamp trimmer should be instructed to turn the wick up until about one-eighth of an inch projects above the brass sheath. Next let him take off the charred portion. Let this be done with the forefinger and thumb. Cutting with shears, besides the mischiefs already set forth, will take off more than is necessary. Rubbing off the charred portion with the back of a knife or a blunt edge of any kind will generally leave fibres which will cause an uneven light. With the finger and thumb just enough can be taken off, and taken off smoothly. All that will not easily break off is good sound wick, no matter how black it may be. To cut a wick down to the very white every time it is trimmed, results in a waste of one-half of it. After pinching off the burned portion of the wick, take just as little off the corners of it as a sharp pair of shears will take hold off and cut. There is always more danger that too much will be taken off than too little. But if just the right quantity is removed, and the cuts on the two corners are made at the same angle, the lamps will give out a broad white flame. To trim a new wick, turn the wick down until the loose and unravelled end projects from the brass sheath, and light it before the oil fills it. It will quickly burn down to the sheath, leaving a straight edge, and can then be trimmed as directed above. The end can as well be burned down to the sheath before the wick is put into the oil.

PRIMEVAL VANITY.

TOILET RECIPES OF ANCIENT EGYPT.

Curious hair recipes occur on some of the papyri, some of which are very absurd. One to prevent the hair from turning gray directs that a salve should be made from the blood of a black cat cooked in oil; in another, that of a black bull is preferred for the same object. Evidently the color of the animal was to pass through the salve into the hair. In another place we read of the tooth of a donkey dipped in honey being used for *really* strengthening the hair; and the ingredients for an ingenious compound are given for injuring the hair of a rival, and the counter remedy to be used by those who think their hair oil has been tampered with by a suspicious *friend*. Cakes of some composition which absorbed oil were always placed on the heads of the guests at feasts, and from them the oil gradually trickled down through the hair. A most disagreeable practice this may seem to us, but to them it appears to have given great pleasure; and with the Egyptians as well as with the Hebrews, oil was symbolical of joy and gladness. Rouge and other coloring substances were used by women of Egypt to enhance, as they thought, their beauty. The eyes had often a green line underneath them; the eyelashes and eyebrows were pencilled; and, as in modern Egypt, the nails were always stained red with a preparation from the henna plant. In our museums we can see the little pots and vases formerly filled with these unguents and colors, and the pencils they used with them, as well as various sorts of combs and hairpins; of the latter there is a very pretty set in the museum at Boulak—single-pronged wooden pins with jackal heads, stuck into a cushion in the form of a turtle, which was evidently one of the favorite dressing-table ornaments belonging to the deceased lady. All these little essentials of the toilet were placed in the tombs by the loving hands of friends and relations for the use of that spiritual body which they believed required all the adornment the lady had loved upon earth. Notwithstanding the elaborate care lavished by the Egyptian lady on her personal adornment, she adopted a simplicity of dress suitable to the climate in which she lived. Except for the wig, the head was usually uncovered, with sometimes a colored band tied round it. The queens often wore the vulture headdress, but this was more as an official ornament than as a covering. In common life also the women, both of high and low degree, went barefoot, though they had sandals to wear when they were in full dress. These sandals were made of papyrus or palm fibre, or of leather. They had straps to pass around the foot and between the toes, and in some a piece of the sole was turned up, and bent over the toes to protect them; in later times some of the leather sandals had sides to them, which causes them very much to resemble modern shoes.—*Woman's World.*

EGGS AS FOOD.

THEIR VALUE AS FLESH AND FORCE PRODUCERS.

Many persons do not seem to fully comprehend how valuable eggs are as food; that, like milk, an egg is a complete food in itself, containing every necessary for the development of a perfect animal, as is manifested from the fact that a chick is formed from it. It seems a mystery how muscles, bones, feathers and everything that a chicken requires for its perfect development are made from the yolk and white of an egg; but such is the fact, and it shows how complete a food an egg is. It is also easily digested, if not damaged in cooking. A raw or soft-boiled egg is always as easily assimilated as is milk, and can be eaten with impunity by children and invalids. The average egg weighs a thousand grains, and is worth more as food than so much beefsteak. Indeed, there is no more concentrated and nourishing

food than eggs. The albumen, oil and saline matter are, as in milk, in the right proportion for sustaining animal life. Two or three boiled eggs, with the addition of a slice or two of toast, will make a breakfast sufficient for a man, and good enough for a king. An ordinary hen's egg weighs from one and a half to two ounces, a duck's egg from two to three ounces, the egg of the seagull and the turkey from three to four ounces, and the egg of a goose from four to six ounces. The solid matter and the oil in the duck's egg exceed those in a hen's egg by about one-fourth. An egg weighing an ounce and three-quarters consists of 120 grains of carbon, and eighteen and three-quarter grains of nitrogen, or 15.25 per cent. of carbon and two per cent. of nitrogen. The value of one pound of eggs, as food for sustaining the actives forces of the body, is to the value of one pound of lean beef as 1,584 to 900. As a flesh producer, one pound of eggs is about equal to one pound of beef. A hen may be calculated to consume one bushel of corn yearly, and to lay ten dozen or fifteen pounds of eggs. This is equivalent to saying that three and one-tenth pounds of corn will produce, when fed to a hen, five-sixths of a pound of eggs; but five-sixths of a pound of pork requires about five pounds of corn for its production. Judging from these facts, eggs must be economical in their production and in their eating, and especially fit for the laboring man in replacing meat.

A BAKER'S PROFITS.

WHAT A BARREL OF FLOUR IS WORTH WHEN MADE INTO BREAD.

A baker will toss a barrel of flour into a trough. Then he tosses 104 pounds of water on top it. A quantity of yeast is added, and then the jolly baker has 300 pounds of dough to operate on. The 300 pounds cost him $5. In short order the dough is turned into "twists," high loaves, pan loaves, and other styles of the same quality. The oven's heat reduces the 300 pounds of dough to 260 pounds of bread. The baker sells his bread at the rate of four cents a pound, or at an advance of over 30 per cent. over what it cost him. There are 1,400 bakers, great and small, in this city, and to them is committed the trust of supplying bread for 1,300,000 persons. There are many bakers in this city who make 1,300 loaves of bread per day and sell it for from $80 to $150, or at a net profit of $40. Little money is lost in the business, and most bakers do a cash trade. It is very seldom that bakers fail. The business is steady, reliable, and attended by very few risks, unless incompetent workmen.

DOMESTIC DIETETICS.

SPECIALLY PREPARED, FROM PRACTICAL TESTS, FOR THE LADY READERS OF THE "AMERICAN ANALYST."

SEASONABLE FOOD.

October.

MEATS.—Beef, mutton, ham, kidneys, liver, venison, sausage.

GAME AND POULTRY.—Pigeon, chicken, duck, woodcock, brant, grouse, partridge, rabbit, snipe, goose.

FISH.—Bass, blackfish, bluefish, clams, cod, crabs, eels, carp, catfish, flounder, halibut, herring, lobster, mackerel, mussels, oysters, pike, porgie, prawn, rockfish, salmon, sea bass, sturgeon, smelt, turtle, white fish, whiting.

VEGETABLES. — Artichokes, beets, beans, broccoli, Brussels sprouts, cabbage, carrots, cauliflower, corn, cucumbers, egg plant, garlic, lettuce, onions, parsley, parsnips, potatoes, radishes, rhubarb, savoy, shallots, spinach, squash, tomatoes, turnips, water cress.

FRUIT.—Apples, bananas, blackberries, grapes, melons, oranges, peaches, pears, pineapples.

PRACTICAL RECIPES.

CELERY SOUP.—Stew six stalks of white celery, cut into small pieces, and one onion, quartered. A bit of mace; salt and pepper, in a quart of veal stock for one hour. Rub the vegetables through a sieve; put the pulp into a saucepan, and add one quart more of veal stock; boil it once it or twice; serve.

LOBSTER PATTIES.—Boil a nice live lobster from fifteen or twenty minutes in water, salt and a little vinegar; cool it off in cold water; drain, take out of the shell, and cut it into small dice; add an equal quantity of cream sauce, and finish with a piece of lobster butter; fill the crusts, and serve very hot.

LOBSTER BUTTER.—Pound the shell of a lobster in a mortar, adding a piece of butter the size of an egg; when well pounded place in a saucepan on the fire, with a small onion, a bay leaf, and a clove; stir once in a while for ten minutes; then add some water, enough to cover the shells, and let it boil fifteen minutes; strain and place it in a cool place, and you will find your butter on top of the water.

VEGETABLE MARROW.—Pare the marrow, divide, and entirely take away the soft part inside. The marrow may be cut into four equal pieces or cut into slices—slices cook more quickly. Put into the oven a roasting tin containing about one-quarter pound of butter; let the butter brown nicely; then put in the marrow and bake until soft and nicely browned. While cooking this must be well basted with butter.

HOE CAKE.—Pour enough scalding water or milk on corn meal (salted) to make it rather moist. Let it stand an hour, or longer. Pour two or three heaping tablespoonfuls on a hot griddle, greased with pork or lard. Smooth over the surface, making the cake about half an inch thick, and of round shape. When browned on one side, turn and brown it on the other. Serve very hot.

OYSTERS ON TOAST.—Chop fine fifteen oysters, add salt, pepper and a little nutmeg. Take a gill of cream and beat it into the yolks of two eggs; beat this lightly into the simmering oysters. When set, pour the mixture over slices of buttered toast.

GREEN CORN MUFFINS.—Boil and grate the corn. Beat six eggs very light and stir them into a quart of milk; then add enough corn to make a thick batter. Add a teaspoonful of salt. Have your well-buttered muffin rings on a hot griddle, fill them three-quarters full of the batter. Bake and serve at once.

HORSFORD GRAHAM MUFFINS.—Two cups Graham flour, two cups white flour, two heaping teaspoonfuls Horsford's baking powder, two tablespoonfuls sugar and a teaspoonful salt, mixed thoroughly together when dry. Then mix with one quart of sweet milk, making a thick batter. Bake immediately in muffin rings.

BRANDY GRAPES.—Select fine close bunches of ripe grapes; put them in jars and to each bunch put a quarter of a pound of sugar candy. Make the jars about two-thirds full, and fill up with French brandy. Top the jars closely and keep in a dry place.

APPLE SLUMP.—One quart of sifted flour with three tablespoonfuls Horsford's baking powder; shorten with one tablespoonful butter rubbed into the flour. Mix with cold milk or water, the same as for biscuit. Put two quarts of pared, sliced or quartered apples with one pint of water into the dish in which the slump is to be cooked. Roll the crust about an inch thick, cut into quarters, and with it cover the apples in the dish; then cover the whole with a close fitting cover, and boil or steam till done. Take out on a platter, and grate nutmeg over the apple. Serve with a sweet sauce, or sugar and cream.

KITCHEN RECIPES.

SOME USEFUL DATA FOR THE CONVENIENCE OF COOKS.

Ten common-sized eggs weigh one pound.

Four teaspoons are equal to one tablespoon.

Soft butter the size of an egg weighs one ounce.

One quart of sifted flour, well heaped, weighs one pound.

One pint of coffee (A) sugar weighs twelve ounces.

One pound of best brown sugar weighs thirteen ounces.

One tablespoon, well rounded, of soft butter weighs one pound.

Two teacups, well heaped, of coffee (A) weigh one pound.

Two teacups, level, of granulated sugar weigh one pound.

Two teacups of soft butter, well packed, weigh one pound.

One and one-third pints of powdered sugar or flour weigh one ounce.

Two tablespoonfuls of powdered sugar or flour weigh one ounce.

One pint, heaped, of granulated sugar, weighs fourteen ounces.

Two and one-half teacups, level, of the best brown sugar weigh one pound.

Two and three-fourths teacups, level, of powdered sugar weigh one pound.

One tablespoonful, well heaped, granulated coffee (A) or best brown sugar equals one ounce.

Teaspoons vary in size, and the new ones hold about twice as much as the old-fashioned spoons of thirty years ago. A medium-sized teaspoon contains a dram.

STORMS TO ORDER.—A French electrician claims that he will soon be able to produce a thunder storm wherever and whenever it is desired.

AN ENORMOUS FIGURE.—The daily consumption of needles in this country is said to be 4,200,000, most of which come from Redditch, England.

WORTH KNOWING.—It may be worth knowing that water in which three or four onions have been boiled, applied with a gilding brush to the frames of pictures and chimney glasses will prevent flies from lighting on them.

LURED TO DEATH.—Moths or any summer flying insects may be enticed to destruction by a bright tin pan half filled with kerosene set in a dark corner of the room. Attracted by the bright tin pan the moth will meet his death in the kerosene.

ROUGH ON MICE.—Soak one or more newspapers, knead them into a pulp, dip the pulp in a suitable solution of oxalic acid. While wet force the pulp into any crevice or hole made by mice or rats. Result, a disgusted retreat, with sore snouts and feet, on the part of the would-be intruders.

NOSE-BLEED.—A simple plan of stopping bleeding of the nose has lately been advised. Grasp firmly the nose with the finger and thumb for ten or fifteen minutes; by thus completely stopping the movement of air through the nose (which displaces freshly-formed clots) you will favor the clotting of the blood, and will frequently stop hemorrhage.

PROBABLY UNTRUE.—Within a radius of sixty miles of Nashville, Tenn., there is found a tree that is said to be the wood of ark fame. Celebrated botanists from all over the country have examined the trees and agree that they grow nowhere else on the globe. They have decided that it is the wood of which Noah's ark was constructed, mention of which is made several times in the Bible. The tree is medium sized, with very dark, smooth bark, and the wood is of a bright gold color. In early spring the trees are laden with long, white blossoms, closely resembling great ostrich plumes. There seems to be no doubt about the identity of the trees, and it is remarkable that they are found only in this small area and so few at that.

SAND-BLAST.—The sand-blast is now utilized for cleaning dingy stone walls of buildings.

A USEFUL HINT.—Lime water is an admirable remedy in cases of diphtheria. Its local effect is most useful in cleansing and purifying the fauces, and its mode of application is the easiest imaginable. It requires no spray apparatus, no douching, and no effort at gargling. It is sufficient to have the patient slowly swallow a teaspoonful or more every hour, in order to get good results from its use. This fact is of the greatest importance in treating children, who are too often cruelly tortured in the attempt to make local applications to the throat. Lime water can be given easily, and is taken readily by children; and there are few cases of diphtheria which require a more energetic local treatment than the one just described.

HEALTHY CHILDREN.

It is almost a truism to state that little or no attention is paid to the health of children. The awful infant mortality which prevails in the most healthful country districts, as well as in the overcrowded tenement houses of the great cities, is more than a demonstration of the proposition. Not that parents and guardians are unkind or cruel. The moment disease attacks a child they spare neither money nor trouble to effect a cure. But they are exceedingly thoughtless and negligent. They forever overlook the fact that infancy, boyhood, and youth are the periods of life in which the temptations to violate nature's laws are a maximum, while the restraining will-power and knowledge are a minimum. Everywhere are the possibilities of disease. In the fields and streets are always unripe or overripe fruits, raw vegetables, and cheap and deleterious candies. The market is full of toys colored with poisonous dyes which are bound to enter the system if they are held between the lips or even by mere contact with the delicate skin of the fingers. The greater sensitiveness and absorbing power of the skin of a child to that of an adult increases the dangers of the former. Soap which a man or woman uses with impunity, if not benefit, acts as a corrosive upon the body of a baby and produces eruptions, sores, and even ulcers. Flannels, which are smooth to the parent, are painfully and irritantly rough to little folks.

Nature, it must be admitted, makes a considerable allowance to children, and apparently gives them immunity in many respects which adults never enjoy. They eat foods of such quality and in such quantity as would be ruinous to their elders, and yet rarely suffer from their inadvertence. The reason is to be found in the greater rapidity and thoroughness of their circulation, the swifter combustion of the elements which are employed by the system as fuel, the purer condition of the blood, and the larger use of the muscular system. An active boy or girl does more work in proportion to weight than does the hardest-working mechanic or the busiest athlete.

By bearing this in mind, it is a very simple affair to preserve a child's health intact through the years. Illness comes with a deterioration of the blood and a decreasing circulation. The latter is the consequence of the former. As the blood becomes impure, the circulation diminishes, blotches and eruptions appear upon the body, and lethargy replaces intense activity. A step beyond and disease makes an appearence. To prevent this as well as to cure it in those cases where it is displayed, the vital current must be purified. The humors it contains must be expelled by the secreting and excreting functions or else destroyed in that combustion which is the basis of life. To accomplish this end, due regard must be paid to nature's laws and suggestions. Fresh air, sunlight, warm bathing, exercise, fruit, careful diet, regular hours and rational amusements are important auxiliaries and can never be overlooked. Beyond all this, it is imperative to use some first-class blood-purifier, which shall strengthen the vital processes. Of all which have any high medicinal value, Ayer's Sarsaparilla best effects the desired results. It stimulates the liver, kidneys, and intestines, restores the normal circulation, incites the secretive processes, and expels from the blood all the humors which, if left to themselves, undermine health and bring illness in some form of other.

ADULTERATED COD LIVER OIL.—It is reported that much of the cod liver oil of Russia is adulterated with liquid paraffine, in some cases as much as 50 per cent.

A SOUND IDEA.—A Bridgeport (Conn.) inventive genius has perfected a locomotive attachment, in the nature of a phonograph, whereby every blast of the whistle is recorded, together with the exact time at which it occurs. This is in the interest of railway companies, to protect them against false representations by persons who meet with accident on the track.

A MAMMOTH MINIATURE.—Students of the earth's surface will be anxious to see the huge globe that is to be exhibited next year in the Champs de Mars, in Paris. It will rotate properly on an axis, and will be accurately constructed on a scale of one millionth. Even at that it will be a tremendous thing, and give considerable of an idea of the appearance of the world we live on.

TEA ADULTERATION.—A suit at law at Moscow, and various investigations, disclose that tea is being shamelessly adulterated. Of forty-four samples which were officially analyzed, four consisted of a mixture of tea and a certain kind of grass, four of the grass alone, and five of tea which had already once been used. In Moscow the police have found a number of barrels of sweepings intended for admixture with tea.

HORSFORD'S ACID PHOSPHATE.

Beware of Imitations. Imitations and counterfeits have again appeared. Be sure that the word "Horsford's" is on the wrapper. None are genuine without it.

MELLIN'S FOOD.

Dr. ARTUUR V. MEIGS, of Philadelphia, Physician to the Pennsylvania Hospital and to the Children's Hospital, author of "Milk Analysis and Infant Feeding," says in a paper on "Dietetic Management of the Summer Diarrhœa of Infants," published in the *Philadelphia Medical News*, July 7th, 1888: "Of all the baby foods that are manufactured, the only one that has given me such results as to encourage me to persevere in its use for any great length of time and to recommend it extensively is MELLIN'S FOOD." A bottle of MELLIN'S FOOD sufficient for a thorough trial, will be sent free of all expense to any physician requesting it. DOLIBER, GOODALE CO., Boston, Mass.

LOOK OUT for Imitations and Substitutes OF

Horsford's ACID PHOSPHATE.

A variety of imitations and substitutes of this standard preparation have appeared under the name "Acid Phosphate," or a similar title, all of which differ materially from the genuine article.

Be sure the name **"HORSFORD'S"** is on the label. No other genuine.

N. D. ARNOLD, TREAS.

Providence, R. I. Rumford Chemical Works.

CALIFORNIA
Fine Table Wines
From our Celebrated Orleans Vineyard.
Groul, Korostchy & Co.
Producers of the
ECLIPSE
CHAMPAGNE,
530 Washington St.
SAN FRANCISCO.
PARK & TILFORD, New York,
C. JEVNE & CO., - - Chicago, } Agents.

A GOOD INCOME.

We have enabled several gentlemen and ladies to add largely to their incomes by paying them liberal commissions on subscriptions, for this and other journals.

For further particulars address

AMERICAN ANALYST,
19 Park Place, New York.

HORTON, CATO & CO.'S

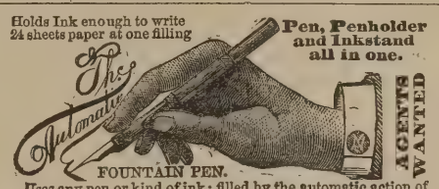


"ROYAL" SALAD DRESSING.
The best prepared Dressing, always fresh, does not turn oily, rancid or decompose as other dressings of a similar nature.

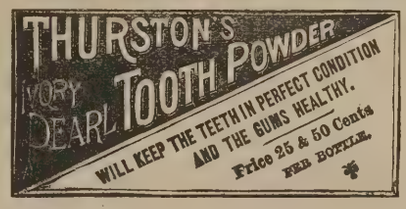
"ROYAL" WORCESTERSHIRE SAUCE,
The Peer of American Product.

HORTON, CATO & CO.,
SOLE PROPRIETORS AND MANUFACTURERS,
DETROIT, MICH.

Holds Ink enough to write 24 sheets paper at one filling



Pen, Penholder and Inkstand all in one.
AGENTS WANTED
FOUNTAIN PEN.
Uses any pen or kind of ink; filled by the automatic action of India-rubber reservoirs; feeds itself by the pressure of writing; carries in the pocket safely; will not leak; finely made and finished in nickel-plate; superior to a $2 Stylographic pen; sells with a rush. Samples, postpaid, 25 cents. Address,
G. H. W. BATES & CO., 125 MILK ST., BOSTON, MASS.



KEITH'S
CON. TINC. AVENA SATIVA
(From Common Oats.)
Without Admixture of any Kind.

A Powerful Nerve Stimulant, Tonic, Etc.

Was first offered to the medical profession by B. Keith & Co., in 1881, as a remedy to be employed in the treatment of

Paralysis, Epilepsy, St. Vitus' Dance, the Morphia or Opium Habit, Chloral and Tobacco Habits, Sleeplessness, Nervous Debility and Exhaustion, Neuralgia, Alcoholism Painful and Deficient Menstruation, Headache, Hysteria, Impotency, Convulsions and Prostration from fainting, and in the Convalescent stage of all Acute Diseases.

Dose.—From ten to thirty drops, or more, as often as may be indicated to meet the urgency of the case. Administer in hot water when quick action is desired.

An Overdose Causes Pain at Base of Brain.

——WE MAKE ONE QUALITY ONLY.——

Price,
3 oz., 45c.; 4 oz., 75c.; 8 oz., $1.35; 16 oz., $2.50

B. KEITH & CO.,
75 William Street, N. Y.

ON THE USE OF PURGATIVES.

BY CHARLES A. HOFF, M. D., ST. LOUIS, MO.

Of all preparations contained within the *pharmacopœia*, there are none, apparently, held in higher esteem by mankind than that class of medicines, commonly known as purgatives. The busy practitioner confidently prescribes them with variable frequency, singly and combined, from the date of the writing of his very first prescription to that of his last; and the corner druggist rarely sees a day pass over his head on which he does not greet the customer who has called around to get "something to act upon his bowels." Indeed, the inevitable purgative awaits the tiny baby screaming in its first attack of colic; it is resorted to by the invalid weighted down with years of suffering and disease; and it is by no means despised by the individual in robust health, when assailed by the various petty ills, which even the most vigorous seldom entirely escape.

Notwithstanding the fact that purgatives are so generally prescribed by the physician, and so frequently resorted to without advice by the patient, they are not altogether incapable of doing harm. As everybody knows, the habit of purging the system repeatedly with salines, cholagogues, hydragogues, or drastics, is a most pernicious one; and the physician who fails to exercise a proper care, both in the selection and the administration of cathartics will sooner or later bankrupt the health of his patients as well as his own hard earned reputation.

Constipation is a complication of so many disorders, a symptom of so many diseases that its treatment in different cases depends upon very different considerations. For a simple, ordinary attack, the average doctor has been accustomed to use a simple purge, such as castor oil, sulphate of magnesia, rhubarb, senna, aloes, colocynth, blue pills, etc.; yet in none of these, can it be truly said, has there been found all that could be wished for, even in so simple a matter as a laxative. Where can we find the physician who has not been vexed and annoyed at the complaints of his patients against the purgative medicines he has been accustomed to prescribe. Some people there are who can not or will not swallow pills; many object to the nauseating castor oil; not a few oppose the use of salines since they are disagreeable both in taste and effect; many look upon all resinous cathartics as objectionable on account of their so called heating properties; aloes is objected to in pills and especially in pregnancy; elaterium is said to be excessively harsh and severe, croton oil is known to be dangerous; podophyllin causes an undue amount of griping; blue mass is avoided on general principles; and so on to the end of the chapter.

Fortunately, however, the physician of the present need no longer be placed in a dilemma when called upon to prescribe a preparation free from the faults enumerated in connection with ordinary purgatives. The pharmacist has bravely come to his aid with a formula of incomparable excellence; and this preparation, a combination of "manna, purified cathartic acid and fruit juice," although but recently brought to the notice of the medical world, is, nevertheless, already regarded as a most valuable addition to the resources of medicine.

The happy thought that suggested the combination known as the Rio Chemical Co.'s Acid Mannate justly challenges unlimited admiration and esteem, and has thus far evoked from the profession an almost universal verdict of commendation and praise. Prompt, mild and certain in its action, Acid Mannate may well be considered an ideal remedy in the constipation of pregnancy. Being pleasant to the taste, and continuing its good work without increased dosage, it is pre-eminently adapted to cases of habitual constipation. Indeed, in its wide range of adaptability as an aperient medicine it is impossible to exaggerate its importance, or allude either directly or indirectly to the vast variety of its beneficial, therapeutical properties.

The importance of laxatives is probably nowhere appreciated so much as in the constipation of pregnancy; and it is to this fact, no doubt, more than to any other, that Acid Mannate owes its great popularity and fame among remedial agents. The testimony of thousands of honorable medical gentlemen leading us to believe that, through the beneficent effect of this same elegant formula, constipation need not hereafter, as in the past, be regarded as one of the most troublesome attendants upon gestation. Moreover, the atrocious female pill of unknown composition but of dire effect, which has deluged the drug market for ages, we may consider as having had its day; and it is to be hoped that, since the physician is now in possession of a purgative especially suited to the period of gestation, female life will be less frequently harassed by the ails and aches said to be peculiar to the sex; and that miscarriages, displacements, granular erosions, congestions, headaches, dyspeptic and hypochondriacal attacks, and the whole long train of aches, pains and nervous ills will grow less familiar to the medical profession in the same ratio that the physician increases his familiarity with the actions of Acid Mannate.

A full sized bottle of Acid Mannate will be sent free to any Physician who desires to test it, if he will pay the express charges and mention this Journal, on application to the

Rio Chemical Co.,
St. Louis, Mo.

J. HENRY HENTZ. J. P. ROBINETT. J. HENRY HENTZ, Jr.

ESTABLISHED 1793.

WHITE, HENTZ & CO.,

SOLE PROPRIETORS OF

Trimble and Pennsylvania Monogram Whiskies.

222 and 224 NORTH SECOND ST., PHILADELPHIA.

D. LIEBER, 17 South William St., New York. Col. H. A. SELIGSON, 1200 Pennsylvania Ave., Washington, D. C.

NATRONA BI-CARBONATE OF SODA.

(ABSOLUTELY PURE.)



The nature of the raw material from which NATRONA BI-CARBONATE OF SODA is made—viz., kryolith, a mineral containing *pure sodium*—insures a purity and uniformity of product which cannot be obtained from any other known material. In making BI-CARB. SODA from any other raw material, the use of sulphuric acid is a necessity, but none is used in any part of the process of making NATRONA BI-CARB.; hence its entire freedom from the slightest trace of arsenic, which is always present in ordinary soda. Its absolute purity and entire freedom from all traces of *sulphate of soda*, common salt and other impurities, render NATRONA BI-CARB. NEARLY TASTELESS, and being bolted through the finest bolting-cloth, insures the finest stage of division.

To these indisputable facts the attention of CONSUMERS of soda is specially called. They are IMPORTANT, and should influence both those who use and those who sell soda, to buy and sell NONE BUT THE BEST.

The NATRONA BI-CARB. Soda is kept in stock by almost every wholesale druggist and grocer throughout the United States, of whom it may be ordered.

Natrona Bi-Carb. Soda is unequaled by any other brand of English or American Manufacture.

PENNA. SALT MANUFACTURING CO.,

NATRONA CHEMICAL WORKS. PHILADELPHIA, PA.

ALTHENE SKIN SOAP

An absolutely pure and perfect soap for all purposes of the toilet, nursery, bath or sick-room. Has the approval of leading chemists and physicians, and is recommended by all who have used it. Price 25 cts. a cake, or 65 cts. for a box of three. Can be obtained of the retail druggists or from

J. W. CAMPION & CO., 916 Filbert Street,

PHILADELPHIA.

4 Mo's FREE

To introduce to every lady reader of the AMERICAN ANALYST we will send

THE MODERN PRISCILLA

for fifty cents (the price for one year) 16 months, or 4 months free; or as a TRIAL OFFER will send it 4 months for 10 cents. THE PRISCILLA is the best **and only practical Ladies' Fancy Work paper published,** devoted exclusively to *Needlework, Embroidery, Knitting and Crocheting, Amateur Painting, Decorative Art and Home Adornment,* and to *questions, answers* and *correspondence* on any of these subjects. **Beautiful illustrations** and carefully written descriptions of articles of Fancy Work. Great attention given to **Knitting** and **Crocheting.** All directions carefully corrected and tested before being published. **Illustrations** of the newest **Edgings, Hoods, Wraps, Infant's Articles, etc.** Among the writers to this Journal are Mrs. E. L. Millar, Miss H. H. Watson, Margaret B. Harvey, Miss Eva M. Niles, Miss Mabel S. Emery.

ARTISTIC NEW DESIGNS.

for Fancy Work are illustrated in each number, and a **full sized Stamping Pattern sent to subscribers for mere cost of paper and postage.** Subscribers can frequently get more than the value of a year's subscription from a single number. **4 Mos. on trial for 10 cts.** Send now. To the 1st, 10th, 20th, 30th, 40th, 50th, 60th, 70th, 80th, 90th and 100th answer we receive each month we will send the Priscilla a year for the 10c. sent. Address, PRISCILLA PUB. CO., Lynn, Mass.

MALTED MILK

THE ONLY FOOD

For Infants and Invalids

THAT CONTAINS ALL THE ELEMENTS OF NUTRITION, WITHOUT A SINGLE ADDITION.

MALTED MILK does not have to be cooked.

MALTED MILK needs no addition of milk, only to be stirred up with water, which can be done without the slightest fuss or trouble.

MALTED MILK will not spoil in hot weather.

MALTED MILK is always ready for immediate use night or day, when traveling or at home.

MALTED MILK does away with the danger of using sour or impure milk.

MALTED MILK is free from starch and cane sugar. All foods that have to be cooked contain starch.

Ask your physician his opinion of **MALTED MILK,** he knows all about it.

Price, . . . 50 Cts. | Large Size, . $1.00

Extra Large Glass Jars for hospital and family use, ... $3.75

These contain five times the quantity of the $1.00 bottles.

A sample bottle will be sent free to any Mother or Invalid sending their address to

MALTED MILK CO.

RACINE, WISCONSIN, U. S. A.

ANALYZE "MONON" Resolutions!!

Whereas, The Monon Route wishes to make known to the world that it has the finest system of Pullman Buffet Sleepers and Chair Cars, running between Chicago and Louisville, or Chicago, Indianapolis and Cincinnati;

And Whereas, This makes it in fact the double connecting link of Pullman travel between the winter cities of Florida and the northern summer cities; then

BE IT RESOLVED, That, before starting on a trip, be sure and address E. O. McCormick, Gen'l Pass. Agent, 185 Dearborn Street., Chicago, for rates, etc.

Why Have the Baby

peevish and fretful, when quietness at night and joy in the household by day is assured by

RIDGE'S FOOD?

None genuine without WOOLRICH & Co. on label.



Used by thousands of first-class mechanics and by such manufacturers as Pullman Palace Car Co., Mason & Hamlin Organ and Piano Co., &c., &c.

Repairs Everything.

Its success has brought a lot of imitators copying us in every way possible. Remember that THE ONLY GENUINE LePage's Liquid Glue is manufactured solely by the

RUSSIA CEMENT CO.

GLOUCESTER, MASS.

Send 10c. and dealers' card who doesn't keep it in stock, for sample.

Patent Pocket Can. No waste.

Autograph below is on every Patent Can.

Russia Cement Co.

YELLOWSTONE NATIONAL PARK, PACIFIC COAST AND ALASKA.

The Yellowstone Park is unquestionably attracting more attention at the present time, as a tourist resort, than any other place on the face of the earth. This spot is reached by rail only by the Northern Pacific Railroad, the famous dining-car line to the Pacific Coast, the only one of the transcontinental lines running dining cars of any description whatever. A book ticket will be sold at the Eastern terminals of the Northern Pacific for $110, including rail and stage transportation, meals on dining cars, Pullman and five day's accommodations south of Livingston in the Park.

The Alaska tour is also one that is attracting wide attention. The rates and facilities offered for making this trip are better via the Northern Pacific Railroad than by any other line. The attractions offered *en route* via the Northern Pacific, such as the ride through the Lake Park region of Minnesota, by the great wheat fields of Dakota, along the Yellowstone River and Clark's Fork of the Columbia, through the famous Spokane Falls region, over the Cascade Range, by the Palisades of the Columbia, Puget Sound, etc., together with the superior accommodations offered, make a trip by this route especially enjoyable. By writing Charles S. Fee, General Passenger Agent, M. P. R. R., St. Paul, Minn., you will receive copy of "Wonderland" and other books descriptive of the Yellowstone Park, Alaska and the country in general traversed by the "Dining Car and Yellowstone Park route."

YOU CANNOT OBTAIN THESE GOODS



Excepting by being measured at one of our stores or sending your order by mail. The **reputation** of these justly celebrated goods is now so widely known in every State in the Union that we have only to keep plainly in the public view, directions how to obtain the

FAMOUS CUSTOM-MADE

PLYMOUTH ROCK $3 PANTS.

Suits cut to order $13.25.

Overcoats cut to order $12.00.

1. "Only a postal card" sent to our Boston store, **provided you MENTION THIS PAPER,** brings by return mail **20** samples cloth to select from, self-measurement blanks and a linen tape measure. 2. But *if you have not time* to wait for samples, tell us about the color preferred, with **waist, inside leg and hip measures,** remit $3, together with 35 cts. to cover cost of expressage or postage, and we will forward the goods prepaid to any address in the U. S., guaranteeing safe delivery and entire satisfaction or money refunded.

ONLY A POSTAL CARD

Remember that for any cause we refund money at buyer's request upon return of goods, or make alterations on new garments **free of extra charge.**

Address all mail to **Boston Store.**

PLYMOUTH ROCK PANTS CO.,
18 Summer Street, Boston, Mass.;
285 Broadway, New York;
Burnside Building, Worcester, Mass.

A letter from the American Express Co. (capital $20,000,000) about our standing and business methods may be obtained by writing to them at Boston.

FACIAL BLEMISHES.



The Largest Establishment in the World for their Treatment. Facial Development, Hair and Scalp, Superfluous Hair, Birth Marks, Moles, Warts, Moth, Freckles, Wrinkles, Red Nose, Acne, Pimples, Black Heads, Scars, Pitting, etc., and their treatment. Send 10 cts. for book of 128 pages, treating on 25 skin imperfections, 6th edition revised and illustrated.

Dr. JOHN H. WOODBURY,
210 West 42d St., New York City, N.Y.

Inventor of Facial Appliances, Springs, etc. Six Parlors; three for Ladies. Established 1870.

FOR THE ILL-EFFECTS

— OF —

Summer Heat, Heat Exhaustion.

Where after a prolonged exposure to a heated atmosphere you feel exhausted, depressed and tired mentally as well as physically, take a dessert spoonful of Bromo-Soda in half a glass of water, and drink while effervescing, when relief will be sure to follow.



A Cure for Sick Headache, Sleeplessness, Etc.

ASK FOR BROMO-SODA and TAKE NO SUBSTITUTE.

ESTABLISHED 1823.

ALEX. YOUNG CO., Limited,

DISTILLERS OF

Y. P. M. WHISKIES.

DISTILLERY, - - - Nos. 408, 410, 412 and 414 South Street.
MALT HOUSE, - Nos. 416, 418, 420, 422 and 424 South Street.
STORE, - - - - - - - - - - No. 700 Passyunk Avenue.

PHILADELPHIA, PA.

New York Office, - 78 Wall Street.

FOR SALE BY

PARK & TILFORD, and ACKER, MERRALL & CONDIT.

LEA & PERRINS' SAUCE.

Lea & Perrins', the original and genuine Worcestershire Sauce has been before the public over a half a century. Like all popular favorites it has long been the standard of comparison and the pattern for counterfeiters who not being able to imitate its excellence offer to the public imitations in bottling, labels and style of putting up. They dare not counterfeit the signature of Lea & Perrins which is on the red label of every genuine bottle, and of which this is a facsimile.

Lea & Perrins

To be sure of obtaining the genuine article, see that the above signature is on the label.

A SET BACK TO ALL PREVIOUS INVENTION.

EDUCATION Quick vs. Old System **Dead.** Education almost by machine process. As mind is above matter so is this method (simply by seven words) above all previous invention of whatever kind. **A Wherewithal Book, $1.00 Form.**

We **guarantee** you will be more than **satisfied.**

If you want this method remit $1 00 by Registered Letter or send Check and receive by mail a great **possibility** from the sole originators and proprietors of the **New Education,**

WHEREWITHAL COMPANY Philadelphia, Pa.

Ask Grocers for our Patent Barley **CRYSTALS,** a new, unrivalled **Cereal Food,** for Breakfast Tea & Dessert. If not sold there, write us for free samples. **GLUTEN FLOUR** and **SPECIAL DIABETIC FOOD** are invaluable waste-repairing flours for **Dyspepsia, Diabetes, Debility & Children's Food.** No bran; mainly free from starch. For all family uses nothing equals our **HEALTH FLOUR.** Send for circular offering 4 lbs. free.

FARWELL & RHINES, Props., Watertown, N.Y.

THE TORSION

Braided Wire Mattress.

At all times a thoroughly ventilated and perfectly clean mattress, it cannot absorb odors, or retain exhalations or disease germs.

D. HAYES AGNEW, M. D., Prof. of Surgery, University of Pennsylvania, says:

"The Torsion Braided Wire Pillow and Mattress I regard as superior to anything of the kind now in use; well suited for either private or hospital use.

Prof. WM. H. PANCOAST, late Professor of Anatomy, etc., in Jefferson Medical College, now Professor of Anatomy and Clinical Surgery in the Medico-Chirurgical College of Philadelphia Hospital Surgeons, says:

"I have used in my surgical practice your Braided Wire, in the form of mattresses, pillows for the head and body, and short pillows for the arm and leg when injured. I find them most admirable, cool and light, yet affording perfect and elastic support.
I have saved a patient from bed sores by the use of the Braided Wire mattress."

WM. H. FORD, President Board of Health, Philadelphia, says:

"I have used the Torsion Braided Wire Mattress with great satisfaction, it is light and therefore easily handled; it is elastic and very comfortable. The case can be easily removed to afford a complete airing, a feature of great importance from a health point of view.
It is an invention of great usefulness.

For descriptive circular and price list, send to

The Torsion Braided Wire Upholstering Company,

1017 CHESTNUT ST., PHILA.

"BILLET"

are

Carefully Selected

French Sardines,

Packed in Choicest Olive Oil.

AT ALL LEADING GROCERS.

Any Retail Druggist in the United States who desires to obtain Advertising Matter, Show Cards, Signs, etc., which will assist and instruct him in the sale of Harriet Hubbard Ayer's Recamier Toilet Preparations and Vita Nuova, should address THE RECAMIER MFG. CO., 52 and 54 Park Place, New York City.

UNEQUALLED Ask your Grocer for, and insist on having, **LEA & PERRINS'** Sauce, "The Worcestershire." It is known throughout the whole civilized world as the Best and most Delicious Sauce. **DELICIOUS.**

SCOTCH MARMALADE, Jams, Fruit and Wine, Jellies, &c.
By James Keiller & Son, Dundee.

SCOTCH BISCUITS, Albert, Water, and Oat Cake,
By Robert Middlemass & Son, Edinburgh.

RACAHOUT des Arabes, by De Langrenier, Paris.

BAY WATER, West India, (J. D. S. brand), in cases, one dozen bottles.
Sold by all first-class Grocers.

JOHN DUNCANS' SONS, 43 Park Place, New York. Agents for the United States.

Robert Gordon's
TRADE MARK.

SPICED · SEA · FOODS
(IN GLASS.)

OYSTERS, LITTLE NECK CLAMS, MUSSELL, SHRIMP, LOBSTER, Etc.,

Packed in 8 and 16 oz. Jars. Guaranteed to be strictly Pure.

MADE OF THE FINEST MATERIALS.

—ALSO,—

ROBERT GORDON'S CONDENSED CLAM CHOWDER,
In 3-lb Cans. Cheapest and Best in the Market.

MANUFACTURED BY

JONES, GORDON COMPANY, Limited,
204 West Street, New York.



GOLD MEDAL, PARIS, 187[illegible]
BAKER'S
Breakfast Cocoa.

Warranted *absolutely pure Cocoa,* from which the excess of Oil has been removed. It has *three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup.* It is delicious, nourishing, strengthening, easily digested, and admirably adapted for invalids as well as for persons in health.

Sold by Grocers everywhere.

W. BAKER & CO., Dorchester, Mass.

Sura Cura ROBINSON'S SURE CURE FOR **RHEUMATISM**
And NEURALGIA,

And remedy for diseases arising from an impure state of the blood. An antidote for **MALARIA.** Price 50 c. and $1. Sent by mail on receipt of price.
Send for Circular.

R. W. ROBINSON & SON,
184 Greenwich Street,
NEW YORK.

Sura Cura

RIDGE'S FOOD

is the most reliable substitute known for mother's milk. Its superiority rests on the test of 30 years use in Great Britain and the U. S. A sustaining, strengthening diet for Invalids; nutritious, easily digested, and acceptable to the most delicate stomach. Four sizes, 35c. up. Pamphlet, "Healthful Hints," sent free. WOOLRICH & CO., Palmer, Mass.

All Postmasters will receive subscriptions for the **AMERICAN ANALYST.**

GOLD You can live at home and make more money at work for us than at anything else in the world. Either sex; all ages. Costly outfit FREE. Terms FREE. Address, TRUE & Co., Augusta, Maine.

STEWART CERAMIC CO.,
312 PEARL ST., Cor. Peck Slip, NEW YORK.
Sole Manufacturers under Morahan's Patents of

SOLID WHITE CROCKERY STATIONARY WASH TUBS
Warranted by us for thirty years against injury (violence excepted).

CANNOT LEAK.



VERY STRONG.

This cut shows three Tubs set up with galvanized iron stands and heavy ash frame firmly secured on top.
SMOOTH GLAZED SURFACES. ALWAYS CLEAN.
The only solid white crockery Washtub ever made in the world. Do not buy imitations until you see the genuine "Morahan's Patent," stamped on every tub. Washboard and Soapcup moulded in every set.

SOLID WHITE CROCKERY SINKS
Made of same material as the Tubs and fully as strong.
Send for Illustrations and Price Lists. **Send for Illustrations and Price Lists.**

PEACOCK'S BROMIDES

(SYR: BROM: COMP: PEACOCK)

NERVE SEDATIVE.

Each fluid drachm represents 15 grains of the Combined C. P. Bromides of Potassium, Sodium, Calcium, Ammonium and Lithium.

USES:—EPILEPSY, and all CONGESTIVE, CONVULSIVE, and REFLEX NEUROSES.

This preparation has stood the test of time and experience, and can be relied upon to produce results, which can not be obtained from the use of commercial bromide substitutes.

DOSE:—One to two FLUID drachms, in WATER, three or more times a day.

PEACOCK CHEMICAL CO., St. Louis.



These Goods are "Par Excellence,"

Pure, Healthful and Reliable, warranted to give satisfaction in every particular. For sale by wholesale and retail grocers throughout the United States. VOUWIE BROS., Manufacturers, CLEVELAND and CHICAGO.

OPIUM AND LIQUOR HABIT CURED.

WE solicit an investigation of our system and methods, and will gladly send to any one very interesting matter on the OPIUM HABIT DRUNKENNESS and their effects and cure. Physicians specially invited to examine, and if desirous of trying our remedies, liberal arrangements will be made with them.

THE LESLIE E. KEELEY CO., Dwight, Illinois.

ESTERBROOK'S STEEL PENS

Leading Numbers  14,048,128 130, 135, 333, 161.

—For sale by all stationers.—

THE ESTERBROOK STEEL PEN CO., 26 John St., N. Y.
WORKS: CAMDEN, N. J.

THE FINEST MADE
COLBURN'S
PHILADELPHIA
MUSTARD
KING OF CONDIMENTS

ESTABLISHED 1857.

J. H. CUTTER,

OLD

BOURBON AND RYE WHISKIES.

We are the Sole Owners and Proprietors of this Celebrated Brand of Whiskey.

C.P.MOORMAN & CO. **LOUISVILLE, KY.**

We Guarantee the Superior Quality and Absolute Purity of every Barrel of Whiskey sold by us under this Brand.

PHYSICIANS'

Club Rates on Valuable Journals.

The American Analyst.

A Semi-monthly Review devoted to Industrial Progress, Sanitation, the Chemistry of Commercial Products and the Suppression of Adulteration. This journal contains just the information, the possession of which is valuable to the practitioner in his intercourse with patients. $1. per year.

The American Medical Digest.

A Monthly Epitome of the best, most practical and useful Papers contained in the Medical Publications of the world. A current record of the Monthly Progress of Medical Science. $2. per year

We will send these two together to any address for $2.00 per year.

We also receive Subscriptions for the following Medical Journals. In each case the publishers' price is given and the price for which we will send that particular Journal with the ANALYST and the DIGEST:

Albany Medical Annals, $1.—$2.75.
Ann Arbor Medical Counselor (Hom.), $2.—$3.75
Atlanta Medical and Surgical Journal, $2.50—$.00
(Only new subscribers taken.)
Austin, Texas, Daniel's Medical Journal, $2.—$3.75
Boston Annals of Gynæcology, $2,—$3.50
Boston Journal of Health, $1.—$2.75
Boston Medical and Surgical Journal, $5.—$6.
(Outside of New England only.)
Chicago, Journal of the Amer'n Med'l Ass'n, $5.—$6.
Chicago Medical Times, $2.—$3.75
Chicago Western Medical Reporter, $1.—$3.
Cincinnati Medical and Dental Journal, $1.—$3.
Dallas, Texas, Courier Record of Med., $2.—$3.75
Detroit, Leonard's Ill. Med. Monthly, 50 cts.—$2.35
Gilsum, N. H., Quar. Rev. of Narc. Inebriety, $1.—$2.75
Indianapolis, Ind., Eclectic Medical Journal, $1.—$2.75
Indianapolis Medical Journal, $1.—$2.75
(Outside of Indiana only.)
Kansas City, Western Medical Journal, $2.—$3.75
Louisville, Medical Investigator, 50 cts.—$2.35
Nashville, Journal of Med. and Surgery, $2.—$3.75
New Orleans, Med. and Surgical Journal, $3.—$4.75
New York, Sanitary Era, $1.—$2.75
Braithwaite's Retrospect, $2.50—$3.50
The Epitome, $2.50—$3.50
New York Medizinische Presse, $2.50—$3.75
(The only *German* Medical Journal in the U. S.)
Phila. Medical and Surgical Reporter, $5.—$6.50
Philadelphia Medical Summary, $1.—$2.85
Philadelphia Medical Register, $2.—$3.50
Phila. Archives of Pediatrics, $3.—$4.50
(The only Journal devoted to the diseases of infants.)
Philadelphia Medical World, $1.—$2.85
Philadelphia Medical Times, $2.—$3.75
Sacramento Medical Times, $2.50—$4.
San Francisco, Pacific Med'l and Surg'l J'n'l, $3.—4.50
St. Louis Medical Brief, $1.—$2.90
St. Louis, American Medical Journal, $2.—$3.25
St. Louis Medical and Surgical Journal, $2.—$3.25
Toronto Canadian Practitioner, $3.—$4.50

More Journals will be added to this List.
Attention is called to the Special Journals in this List such as the
Boston Annals of Gæyncology,
New York Medizinische Presse,
Phila. Archives of Pediatrics.

SWIFT'S

Choice Chicago Dressed Beef

—AND—

MUTTON.

CAN be found at all times in full supply and at popular prices at the branch houses in all the larger cities and is ***retailed by all first class butchers.***

The trade of all marketmen and meat dealers is solicited for our Wholesale Branch Houses, and the ***public may rest assured*** *that in* ***purchasing our meat*** *from dealers they will* ***always receive the best.***

SWIFT AND COMPANY,

UNION STOCK YARDS,

CHICAGO, ILLS.

Tabasco Pepper Sauce

OR LIQUID PEPPER.

Is simply the Pulp of the Ripe Pepper Extracted by Pressure.

The seed of this Pepper was obtained from Central America, and by careful cultivation in Louisiana for many years has been so improved in strength, flavor and aroma, as to have become a new variety of Red Pepper, superior to all others. The pulp is so handled as to retain all the flavor, strength, aroma and color of the ripe fruit, and to keep unimpaired in any climate. It excites the appetite, promotes digestion, and is pronounced, by connoisseurs, to be the finest condiment in the world. For medicinal purposes it recommends itself by its purity, strength and diffusible form.

Manufactured by E. McILHENNY,

NEW IBERIA, LA.

For Sale by all Wholesale Grocers.

CARNRICK'S SOLUBLE FOOD

IS UNLIKE ANY OTHER INFANT'S FOOD THAT HAS EVER BEEN PRODUCED.

℞

THE FORMULA.

Partially Predigested Milk Solids,	**45 parts.**
Wheat with the Starch converted into Dextrin,	**45 "**
Milk Sugar,	**10 "**

We do not claim this food to be "a perfect substitute for human milk." But we do claim that **Carnrick's Food approaches nearer to human milk in constituents and digestibility than any other food that has ever been produced**, and that it is the only infant's food that will, without the addition of cow's milk, thoroughly nurse a child from its birth.

We believe that **Carnrick's Food** solves the problem of a reliable substitute for human milk. The Caseine of cows' milk, by partial predigestion with freshly made Pancreatine, is rendered as easily digestible by the infant as human milk.

We have never published an analysis of **Carnrick's Food** "prepared with milk," for, unlike all other foods, it is prepared by the addition of water only, and we base our claim upon the intrinsic value of the food as compared with an equal amount of solid constituents of human milk. All other analyses or comparisons are misleading. We challenge similar comparisons with any other food, and confidently believe, that if **Carnrick's Food** is depended upon for the nutrition of infants, the great mortality among children will be reduced. Full information regarding the process of manufacture will be cheerfully furnished, and samples sent free to those who wish to test **Carnrick's Food.**

REED & CARNRICK, New York.

GORDON & DILWORTH

MANUFACTURING PURVEYORS

Established 1847

ALIMENTARY PRODUCTS

ALL OF OUR PRODUCTIONS BEAR THIS TRADE MARK

WE WILL PROSECUTE ALL INFRINGEMENTS & IMITATIONS







CHOICE DESSERTS

OVER 100 DOMESTIC & FOREIGN FRUITS AND VEGETABLES TRANSMUTED INTO TABLE DELICACIES

PRICES ON PRESERVED FRUITS REDUCED 1ST DEC. 1885

PRESERVED, CANNED & BRANDY FRUITS, FRUIT JELLIES, VEGETABLES, TOMATO CATSUP, SYRUPS & JAMS, SALAD DRESSING, BLACKBERRY BRANDY, MINCE MEAT, PLUM PUDDING, SWEET PICKLES, OLIVES & CAPERS, WINE JELLIES, MARMALADE, SOUPS SAUCES &c.

SOLD BY THE LEADING GROCERS ON THE AMERICAN CONTINENT.

BOVININE, BUSH'S FLUID FOOD.

Is the ORIGINAL and ONLY preparation of RAW FOOD that does not become putrid and disgusting in a short time.

A MOST WONDERFUL NUTRIENT.

The vital principles of Beef and Mutton concentrated. A highly condensed Raw Food Extract. Acceptable to the most delicate taste and smell. Retained by delicate stomachs that reject all other foods. It assimilates more readily than any other food known to the medical profession. Bovinine under the microscope shows the blood corpuscles in their normal condition strongly marked, while in other foods or extracts this vitally important element is destroyed by the action of heat in cooking.

Containing 26.58 Per Cent. of Soluble Albuminoids,

According to OSCAR OLDBERG, Ph.D., Professor of Chemistry and Toxicology, and Dean of the North-Western College of Pharmacy.

A. L. LOOMIS, M. D., Professor in Medical Department of University of New York, says: "I prescribe Bush's Fluid Food or BOVININE, and prefer it to similar preparations."

J. S. JEWELL, M. D., Chicago, says of Bovinine: "I am delighted with it; it is what I have been looking for these twenty years, and it supplies a want that nothing else has been able to fill."

DRS. WARD and FRED. SMITH, speaking for themselves and their colleagues of the Hospital of St. Barnabas, Newark, say: "Bovinine was readily taken by the patients, was easily retained, and in many cases by stomachs which had rejected all other forms of nourishment. We believe Bovinine contains more nutriment, relative to the bulk, than any other preparation known to the medical profession."

"During the last four months of his sickness, the principal food of my father, General Grant, was Bovinine and Milk; and it was the use of this incomparable food alone that enabled him to finish the second volume of his personal memoirs.—FRED. D. GRANT."

October 1st, 1885.

Carefully prepared from the formula of the late James P. Bush, by the J. P. Bush Manufacturing Co., 44 Third Avenue, Chicago, Ill.

PUT UP IN 6 AND 12 OUNCE SIZES, AT 60c. AND $1.00 PER BOTTLE.

For Sale by all Druggists.

Principal Office, 2 BARCLAY STREET, NEW YORK CITY.



IMPERIAL GRANUM

THE GREAT MEDICINAL FOOD

THIS ORIGINAL and WORLD RENOWNED DIETETIC PREPARATION is a Substance of UNRIVALED PURITY and MEDICINAL WORTH. A solid extract derived from very superior growths of Wheat—nothing more.

It has justly acquired the reputation of being

THE STANDARD DIETETIC PREPARATION.

And has been recommended and certified to by a large number of Chemists and Physicians, representing a very high degree of medical science as

THE SALVATOR FOR INVALIDS AND THE AGED,

A SUPERIOR NUTRITIVE IN CONTINUED FEVERS,

A RELIABLE REMEDIAL AGENT IN ALL DISEASES OF THE STOMACH AND INTESTINES, (often in instances of consultation over patients whose digestive organs were reduced to such a low and sensitive condition that the Granum was the only thing the stomach would tolerate when life seemed depending on its retention), and, AN INCOMPARABLE ALIMENT FOR THE GROWTH AND PROTECTION OF INFANTS AND CHILDREN. We do not hesitate, however, in saying that no food for the nursling can at all compare with a healthy mother's yield of milk; but when the breast fails to give sufficient quantity of nourishment, or the mother's milk is lacking in nutritive substance—the IMPERIAL GRANUM is, as has been proved in thousands of cases,

THE SAFEST FOOD.

Unlike those preparations made from animal or vinous matter, which are liable to stimulate the brain and irritate the digestive organs, it embraces in its elementary composition THAT WHICH MAKES STRONG BONE AND MUSCLE, THAT WHICH MAKES GOOD FLESH AND BLOOD, THAT WHICH IS EASY OF DIGESTION, NEVER CONSTIPATING, THAT WHICH IS KIND AND FRIENDLY TO THE BRAIN, and THAT WHICH ACTS AS A PREVENTIVE OF THOSE INTESTINAL DISORDERS INCIDENTAL TO CHILDHOOD. And while it would be difficult to conceive of anything in food or dessert more creamy and delicious, or more nourishing and strengthening as an aliment in

FEVERS, PULMONARY COMPLAINTS, GASTRITIS, DYSPEPSIA and GENERAL DEBILITY,

its rare medicinal excellence in all intestinal diseases, especially in

CHOLERA, DYSENTERY, CHRONIC DIARRHŒA and CHOLERA INFANTUM

HAS BEEN INCONTESTABLY PROVEN.

Sold by Druggists. **JOHN CARLE & SONS, New York.**

MALTINE

MALTINE is far superior in nutritive and diastatic value to any Malt Extract manufactured in the World. There is no reconstructive that excels Maltine in Phthisis and many wasting Diseases.

MALTINE in its different forms is the only malt preparation we now employ, being so palatable, digestible, and easily assimilated. Of its efficiency in appropriate cases there is no more doubt in our minds than there is of the curative power of Quinine, Cod Liver Oil, the Bromides, and the Iodides.

It deserves to stand in the front rank of constructives, and the constructives by their preventive, corrective, and curative power are probably the most widely useful therapeutical agents that we possess.
PROF. L. P. YANDELL.

MALTINE is a valuable food, a food of priceless value at times of emergency. In fact, in very grave gastric cases it is a food which may be often resorted to when at one's wit's end what to do.
J. MILNER FOTHERGILL.

Out of 14 trade samples of Malt Extract examined by Messrs. Dunstan & Dimmock, ONLY THREE possessed the power of acting on starch. These brands were MALTINE, Corbyn, Stacey & Co.'s Extract, and Keppler's Malt Extract. WILLIAM ROBERTS, M.D., F.R.S.

I have subjected "Maltine" and all other leading "Extracts of Malt" to an exact quantitative comparison of their diastatic activity. The results demonstrate conclusively the far greater diastatic value of Maltine, and enable me to state, without any qualification whatever, that it far exceeds in diastatic power any of the six preparations of Malt which I have examined. R. H. CHITTENDEN.
Professor of Physiological Chemistry in Yale College.

At the International Health Exhibition held in London, England, the only gold medal and the highest award of merit were given to Maltine by a Jury composed of the best chemists in Europe, and recent analyses made by the most reliable authorities in Europe and America prove conclusively that Maltine—in nutritive and diastatic value—is superior to all other malt preparations now in the market.

NOTE.—Physicians will observe that Maltine, as now prepared, is not so viscid as formerly made, being of a more fluid consistency; and, while retaining the nutritive and diastatic value which has given it precedence over all other Extracts of Malt, it is rendered entirely agreeable to the taste of the most fastidious, and is more easily administered. As now prepared, we positively guarantee that Maltine will not ferment or congeal in any climate or at any season of the year.

COMPLETE LIST OF MALTINE PREPARATIONS.

MALTINE (Plain).
MALTINE with Alteratives.
MALTINE with Cod Liver Oil.
MALTINE with Hypophosphites.
MALTINE with Peptones.
MALTINE with Pepsin and Pancreatine.
MALTINE with Phosphates, Iron Quinia, and Strychnia.
MALTINE Ferrated.
MALTO-YERBINE.
MALTO-VIBURNIN.
MALTINE with Cascara-Segrada.

Physicians may obtain Maltine from all druggists in every part of the world. In cases where the physician intends to prescribe Maltine, the word "Maltine" should be written, and not simply the words "Malt Extract," or "Extract of Malt."

Send for Pamphlet giving comparative analyses by 100 of the best Analytical Chemists in this country and Europe.

We will be happy to supply any regular practitioner with eight ounces each of any three Maltine compounds that may be selected rom our list, providing he will agree to pay express charges on same.

THE MALTINE MANUFACTURING CO.,
54 Warren Street, New York.
Laboratory, Yonkers-on-Hudson.

In corresponding with Advertisers, please mention the AMERICAN ANALYST.

ARMOUR & CO.
CHICAGO, ILLS.

PACKERS OF

Pork and Beef Products

CANNED MEATS,

ETC.,

FOR HOME CONSUMPTION AND FOR EXPORT

TO ALL PARTS OF THE WORLD.

Also,

SHIPPERS OF

Choice Dressed Beef,

MUTTON AND HOGS,

In Refrigerator Cars,

To BOSTON,
NEW YORK,
PHILADELPHIA,
BALTIMORE,

And other cities throughout the country.

Established in London, 1831.

DEAN'S PATENT

ARDENTER MUSTARD.

BEST IN THE WORLD.

WARRANTED ABSOLUTELY PURE.



WARRANTED ABSOLUTELY PURE.

Ardenter Mustard Pellets

—FOR—

Dyspepsia and Indigestion.

UNIVERSALLY recommended and prescribed by physicians. The medicinal property are English mustard seed coated with pepsin and sugar. You will find it will relieve you after using two or three doses. It is very beneficial for Heartburn, Sour Stomach and Headache. They are a beautiful confection for children. Each bottle contains full directions.

W. G. DEAN & SON,
361 and 363 Washington Street, 84, 86 and 88 North Moore Street, New York.

—THE—

CHRISTIAN MOERLEIN
Brewing Co.,
CINCINNATI, U. S. A.,

Brewers of the far-famed

"NATIONAL" EXPORT

(The Queen of Beers)

LAGER.

Owing to its absolute purity, beautiful pale color, fine aroma and nutritious qualities, the above beer has become the PRIME FAVORITE in all the principal hotels and clubs, and in thousands of families throughout the West and South.

Pure LAGER BEER,
"IMPERIAL" and "CULMBACHER"

Brewed & Bottled SPECIALLY FOR HOTELS, CLUBS AND PRIVATE FAMILIES

—BY—

Beadleston & Woerz
291 W. 10th St. New York.

Orders by Postal Card promptly attended to.

GREENWAY'S PORTER

—AND—

DOUBLE AND EXTRA DOUBLE STOUT.



Greenway Bottling Co.,

BOTTLERS OF

GREENWAY BREWING CO'S BRANDS OF ALE, PORTER, DOUBLE STOUT

—AND—

Germania Brewing Co's Standard Pale Crown Lager & Culmbacher.

N. Y. Depot, 31 Broadway.



Its superior excellence proven in millions of homes for more than a quarter of a century. It is used by the United States Government. Endorsed by the heads of the Great Universities as the Strongest, Purest, and most Healthful. Dr. Price's Cream Baking Powder does not contain Ammonia, Lime or Alum. Sold only in cans.

PRICE BAKING POWDER CO.
NEW YORK. CHICAGO, ST. LOUIS.

STERLING
BAKING
POWDER



MADE FROM
99 50/100 PURE CREAM TARTAR.

This powder never varies. A marvel of purity, strength and wholesomeness. More economical than the ordinary kinds. SOLD ONLY IN CANS.

STERLING MANU'F'G CO.,
12 & 14 Spruce St., New York.

"GOOD MORNING"
COFFEE PERCOLATOR.

RICHEST, PUREST, BEST CUP OF COFFEE EVER MADE.

SIMPLEST AND QUICKEST PROCESS.

RETAINS ITS FULL STRENGTH AND AROMA BUT HAS NO BITTER TASTE.

ONE POUND OF COFFEE WILL GO TWICE AS FAR AS BY ANY ORDINARY METHOD.

FOR SALE BY THE TRADE.

ARE YOU A GOOD JUDGE OF COFFEE?



IF YOU CANNOT PROCURE IT IN YOUR TOWN, WRITE TO

MANNING, BOWMAN & CO.
57 Beekman St., New York.
Circulars and Price List sent Free on Application.

AMERICAN ANALYST CLUB RATES.

	Regular Price.	Price including American Analyst.
American Magazine	$3 00	$3 00
American Rural Home	75	1 05
American Agriculturist	1 50	1 60
Arthur's Home Magazine	2 00	2 00
Babyhood	1 50	1 60
Ballou's Magazine	1 50	1 75
Cassell's Family Magazine	1 50	1 75
Century	4 00	4 00
Christian Herald, N. Y.	1 50	1 50
Christian Union	3 00	3 00
Country Gentleman	2 50	2 50
Demorest's Magazine	2 00	2 00
Family Story Paper	3 00	3 00
Farm and Fireside	50	1 00
Fireside Companion	3 00	3 00
Frank Leslie's Illustrated Newspaper	4 00	4 00
Frank Leslie's Popular Monthly	3 00	3 00
Galaxy of Music	1 00	1 25
Gleason's Home Circle	2 00	1 50
Godey's Lady's Book	2 00	2 25
Golden Days	3 00	3 00
Good Housekeeping	2 50	3 00
Harper's Bazar	4 00	4 00

	Regular Price.	Price including American Analyst.
Harper's Young People	$2 00	$2 25
Harper's Weekly	4 00	4 00
Harper's Monthly	4 00	3 50
Household	1 10	1 35
Housekeeper	1 00	1 25
Ledger	3 00	3 00
Lippincott's Magazine	3 00	2 50
New York Weekly	3 00	3 00
Our Little Ones and Nursery	1 50	1 65
Peck's Sun	2 00	2 25
Peterson's Magazine	2 00	2 00
Puck	5 00	4 50
Rural New Yorker	2 00	2 30
Saturday Night, Philadelphia	3 00	3 00
Saturday Evening Post, Philadelphia	2 00	2 00
Scientific American	3 00	3 25
Scribner's Magazine	3 00	3 00
Vick's Illustrated Monthly	1 25	1 50
Western Rural	1 50	2 00
Wide Awake	2 40	2 60
Yankee Blade	2 00	1 50
Young Ladies' Journal	4 00	3 50
Youth's Companion	1 85	2 25

If any paper is desired, not mentioned in the above list, a postal card inquiry will receive a prompt reply. Address,

THE ANALYST PUBLISHING CO.,
19 Park Place, New York.

See Club Rates for Medical Journals on page 427.

ESTABLISHED 1872.

GELATINE.

JAMES CHALMER'S SON'S

Transparent Gelatine.

PURITY—STRENGTH.

Best for Family Use.
Jellies, Blanc Mange, Etc.

ACKNOWLEDGED BY EVERY ONE EQUAL TO THE BEST.

Natural Lithia Water.

FARMVILLE LITHIA WATER

FROM VIRGINIA.

—Not only Relieves, but—

CURES

Bright's Disease, Kidney Troubles of all Kinds, Rheumatism, Rheumatic Gout, Dyspepsia, Bladder Troubles, Diabetes, Calculi, Albuminuria. Without Taste or Odor. An Unapproachable Record in Results.

Sold by HAZARD, HAZARD & Co., Fifth Avenue Hotel, and other first-class Pharmacists. Pamphlet free upon application.

FARMVILLE LITHIA SPRINGS CO.,
298 Broadway, New York, and Philadelphia.

AMERICAN ANALYST

FOR THE

FAMILY AND CONSUMER.

A SEMI-MONTHLY ADVOCATE OF PURE FOOD AND THE SUPPRESSION OF ADULTERATION.

Office, 19 Park Place.

[Entered at the Post Office at New York, as Second Class Matter.]

VOL. IV.—No. 21. NEW YORK, NOVEMBER 1, 1888. Whole No. 93

CONTENTS.

Answers to Correspondents 438
Cigarette Abomination 439
Corn—A Rhapsodic Suggestion 439
Coffee Swindlers 442
Curious Foods 437
Domestic Dietetics 441
Esoteric Life Devotion. Complete Story 433
Editorial 438
Poor Food Advocacy; Apollinaris; The Soul in Tennessee; Pepper Adulteration.
Father Schleyer's Death 440
French Dishes—(*Concluded*) 436
New York Beef Denounced 435
Soda Water 437
Table Evolution 440
The True Reason 440

ESOTERIC LIFE DEVOTION.

In the commune of Vair-sur-Vaise the most polite people called them the two love-birds; others, less sympathetic, or more timid, named them the sorcerers. This double designation was justified by their perpetual seclusion in a little house at the end of the village, at two steps from the cemetery.

However, it was well known that the taller and leaner one, with long black hair and phantom face, was Mr. Michel; the other, short and fat, with a reddish skin, was Mr. Valade. They came from Paris one winter morning, and after a visit of some hours here and in the neighborhood, had bought the house and furnished it; then they received by express several cases, which the messenger declared to be as "heavy as thunder," an estimate that everybody comprehended when it was known that they were full of books.

And thus the claustral life had begun. Ah, they were ones who didn't help business! What did they live upon? To believe the baker, the butcher, and other tradesmen, they did not spend forty dollars a month for their food. It was not astonishing that public sympathy was aroused. To begin with, mysterious persons are always suspected. It is only wickedness that is concealed. In pursuance of this logic, which is characteristic of the crowd and the expression of which constitutes the wisdom of proverbs, Peter Fayont, the market gardener, whose specialty was to keep the gossiping old ladies posted, declared that he would find a way to know the truth. He put himself on the watch, and carried his zeal so far as to climb upon the walls in the evening and look into the windows of the habitation.

Now, he saw nothing at all, and consequently was very much frightened. The two men were sitting facing each other, their hands resting upon the table; they were neither eating, drinking, nor speaking. They remained thus motionless during several hours. Surely their consciences could not be calm. The neighbors gossiped; but, finally, as the two men owed nothing, paid their taxes regularly, and did no more harm than they did good, they were left in their isolation. The villagers contented themselves in pointing out the house to strangers as a curiosity.

II.

Mr. Michel and Mr. Valade had been intimate friends for ten years. They were about the same age, and had become acquainted one day at the house of Mlle. Huet, where a spiritualist circle had been held. The medium had evoked the shade of Confucius, and in quitting the house the two men exchanged their impressions. Really this Confucius had said—or rather written—by means of a pencil attached to a basket some extraordinary things, such as "Love each other," or "The good man is he who does no wrong to his neighbor."

It was the first time that Mr. Valade—who called himself an ex-professor, without specifying in what college he had taught—came to admire these wonders. He did not conceal the fact that he was a little skeptical. He did not deny, certainly, but it was very difficult to suppose that Confucius would consent to quit the other world to come and hold a bit of a conversation on the third floor.

Mr. Michel was much more serious. He was forty years old, and during the past fifteen years — yes, fifteen years, sir—had studied the occult sciences. Of course he had not yet fathomed the great mystery, but he felt that he was on the border. One more step and he would walk in the sublime field of revelation.

"I have two thousand dollars income, sir," he added, "and I would joyfully give them to the one who would reveal to me the mystery of the hereafter! But I shall discover it. I have already learned Hebrew, and decipher the 'Septer Jesirah' easily."

Mr. Valade admitted that he possessed only two hundred dollars income. But this did not prevent enthusiasm, and, in fact, he became very enthusiastic. Mr. Michel's conversation did more to convince him than all the sittings and experiences in the world.

They became friends. Mr. Michel needed to express his thoughts in order to elucidate them; then he had long desired a co-worker, but one of those men ready to sacrifice their lives in the search for truth. He had imagined—he admitted it quietly—a series of stories based upon the old hermetic science, and he had already felt the breath emanating from the great One and All pass through his hair.

"You believe the great One and All?" murmured Mr. Valade, in the paroxysm of admiration.

And why should he not be this co-worker? Did Mr. Michel, by chance, suppose that a "breath passing through the hair" would make him afraid? The Unknown, the Unnamed, the Parabrahm of the Thibetans, or the Zere of the rabbis had no terrors for him.

Mr. Michel, who was lean and pale, and who had an income of two thousand dollars, was touched by the enthusiasm shown by Mr. Valade, who was fat and rosy, and who had only two hundred dollars' income, and declared that henceforth they would have only one heart and one purse. Mr. Valade kindly consented to this proposition. Only it was well understood that from this day they would renounce all the stupid cares of this world, drown themselves in the occult and hermetism and concentrate all their energies, aspirations and vitality in the incessant works of esoterism.

"How nicely that happens!" responded Mr. Valade. "Esoterism has been the dream of my life!"

III.

Since then the two men had not quitted each other. The agreement had been religiously kept on both sides. Mr. Valade regularly evoked the spirits on Monday, Wednesday and Friday—Tuesday, Thursday and Saturday being reserved for Mr. Michel. On Sunday they evoked them together, so that jealousy had never troubled their friendship. Besides, the spirits had shown a certain delicacy. Evidently Mr. Michel, who had an income of two thousand dollars, had a right to more consideration than Mr. Valade, who possessed only two hundred dollars income. So, generally, it was when Mr. Michel operated that the personages evoked showed more compliance in emerging from the depths of the unknown. Homer, Socrates, Cicero, Malebranche and Saint Martin were assiduous in their visits. Mr. Valade, more modest, contented himself with lesser lights.

However, in spite of their continuous efforts, they did not succeed in penetrating the great secret. Certainly these illustrious men had said some very fine things; but, if they affirmed by their presence the continuation after death of the spiritual personality, they obstinately refused to furnish an undeniable proof. And yet, what was more simple? It was all very well to rap upon tables and direct pencils upon slates, but a real apparition would have been better. Of course, no one expected them to appear in flesh and bones and put their elbows on the table, but a simple fluid manifestation, a bit of vapor or smoke.

Mr. Valade, who, no less than Mr. Michel, was astonished at the spirits' resistance, racked his brains to discover the means to make them appear. One day he uttered the famous "Eureka!" of Archimedes, and insinuated that perhaps the spirits were troubled by the noise of the capital. They would probably not consent, in this hubbub of civilization, to divest themselves of the protective armor of tables, closets, etc.

A fortnight later the two friends were settled at Vair-sur-Vaise.

Six months later Mr. Michel said: "My friend, you see that neither here nor elsewhere the spirits are disposed to reveal their secret, which may be resumed in this question: 'What becomes of man after death?' I have reflected a great deal, and this is my conclusion: We cannot deny that the spirits have shown us a certain sympathy. I even dare to affirm that very few men, if I except Paracelse and Allan Kardec, have been admitted so far into their intimacy. However, follow closely my reasoning. The spirits that we evoke have only very short intercourse with us, and we could not sincerely require them to show us a confidence that is only given to those who are thoroughly known."

"That's true," said Mr. Valade.

"Suppose, for example, that of two friends who had

LACTOPEPTINE,

The most important remedial agent ever presented to the Profession for Dyspepsia, Vomiting in Pregnancy, Cholera Infantum, Constipation, and all Diseases arising from imperfect nutrition.

Lactopeptine precisely represents in composition the natural digestive juices of the Stomach, Pancreas and Salivary Glands, and will, therefore, readily dissolve all foods necessary to the recuperation of the human organism.

CAUTION

We regret that we are compelled to caution the profession in prescribing Lactopeptine, but very careful investigation has proven to us clearly the necessity of it. Substitution of cheap and worthless compounds are being made in many cases where Lactopeptine is prescribed.

Lactopeptine is always UNIFORM, and its effects are SPECIFIC, and no one has ever been able to imitate its digestive value. If you do not obtain positive results when you prescribe Lactopeptine, you can be sure that some substitution has been made, and in such cases it may be necessary for the physician to prescribe Lactopeptine in the original ounce package to insure certainty of obtaining the genuine article. We can confidently make this assertion, knowing the scrupulous uniformity in digestive value of every ounce of Lactopeptine.

Lactopeptine has always been kept strictly in the hands of the Medical Profession, never having been admitted in any publications but Medical Journals. It is prescribed by the most intelligent and educated physicians in all parts of the world, and there are but few physicians who have ever used Lactopeptine that will not agree with the late Prof. L. P. Yandell, when he says: "Lactopeptine is one of the certainties in medicine, and in this respect ranks with Quinine."

In the various forms of Dyspepsia, in vomiting in Pregnancy, and in Mal-nutrition of children, there is no known remedy so positive in results.

P. O. Box 1574. THE NEW YORK PHARMACAL ASSOCIATION, NEW YORK.

not quitted each other for many years one should die before the other. Oh! then it is certain that he would run at the call of the survivor and would tell him all, without mistrust or reticence."

"I understand," cried Mr. Valade. "The one of us two who dies first will return in his abnormal body and reveal to his friend the secret of eternity!"

"Exactly. You and I are devoted to the Idea. Instead of uselessly wasting our existence in studies that bring us no practical result, let us anticipate the secret. I have remarked that your power of evocation is greater than mine. I need no other proof of this than the short visit made by Adam, which so astonished us the other day. So, I am going to die; you will call me and I will tell you all. You can then, strong in the possession of the truth, begin the grand preaching that will regenerate the world."

"It is astonishing how our ideas are alike," said Mr. Valade. "I had even hinted to you a few words of this sublime thought that your genius has so magnificently developed. But I am not wholly of your opinion. You are an older evocator than I, and, without any false modesty, I think you are more in favor in the upper spheres. Here is what I propose: I will leave you all I possess, and will kill myself, and you shall receive the great secret."

A warm discussion followed, and for the first time in ten years the two friends came near saying disagreeable things to each other. In fine, they ended by coming to an understanding. Each one would make his will, and then they would draw lots. No sooner said than done, and the same evening they prepared for the great work. It happened that Mr. Valade had, in some chemical studies, distilled an exquisite vegetable poison, which did not leave the least trace. It caused a gentle sleep, and the liquor was so easy to take. A small wineglass sufficed.

Now they were to draw lots. It was very simple. Mr. Valade wrote upon two pieces of paper the numbers one and two. The number one was Mr. Michel, the number two was himself, Mr. Valade. The number drawn would indicate who was to swallow the dose; but Valade insisted upon Michel's drawing.

The embraced each other, placed their two testaments upon the table, one beside the other, then the two glasses of poison. The one whose number came out first would instantly drink the beverage—so as to shorten the pangs of separation.

Michel put his hand in the hat, drew out number one, drank, and fell down dead.

"This is the way to win an income of two thousand dollars!" said Mr. Valade.

MELLIN'S

TRADE MARK.

FOR INFANTS & INVALIDS.

FOOD

The Only Perfect Substitute for Mother's Milk.

A Copy of our Book,

The Care and Feeding of Infants

will be MAILED FREE to any address.

DOLIBER, GOODALE CO.,

40-41-42-43 Central Wharf, Boston, Mass.

STEVENSVILLE MILLS.

IMPEROYAL VACUUM COOKED OATS.

IMPEROYAL VACUUM COOKED WHEAT.

M. D. STEVENS'

SOLE MANUFACTURER OF

ABSOLUTE PURITY.



HOUSEHOLD NECESSITY.

ONE MINUTE IN PREPATATION.

IMPEROYAL VACUUM COOKED HOMINY.

IMPEROYAL GRIDDLE CAKE FLOUR.

Recommended by Eminent Physicians and Chemists.

☞ Adapted to all kinds of Pastry, Bread, Biscuit, Griddle Cakes, etc., and its absolute purity and freedom from Alum, Terra Alba or any injurious ingredient, makes it a necessity in every household. No lady can afford to be without it. Sold by best Grocers.

M. D. STEVENS,

Room 18, Mercantile Exchange,

Cor. Hudson & Harrison Sts., NEW YORK.

Doctor

Cupid's

Advice



It is a full and complete diet, prepared with water only. Always uniform in quality and the most economical food available.

THOMAS LEEMING & CO., SOLE AGENTS, NEW YORK.

F. W. DEVOE & CO.,

ESTABLISHED 1852.

PURE MIXED PAINTS

WE desire to call attention of consumers to the fact that we guarantee our ready-mixed paints to be made only of pure linseed oil and the most permanent pigments. They are not "Chemical," "Rubber," "Patent," or "Fireproof." We use no secret or patent method in manufacturing them by which benzine and water are made to serve the purpose of pure linseed oil. Sample cards containing 50 desirable shades, sent on application.

Catalogues of our different departments to responsible parties.

FINE VARNISHES, WOOD FILLERS, WOOD STAINS.

Artist's Materials. Mathematical Instruments.

Cor. Fulton and William Sts., New York.

COFFIN, DEVOE & CO.,

179 RANDOLPH STREET, CHICAGO.

"OUR TWIN COMFORTS."

Two Essentials for Sound and Beautiful Teeth,



A Perfect Polisher & Thorough Cleanser

More cleanly than bristles and avoids the irritation to the **Gums,** and injury to the **Enamel,** so frequent from their use.



Conveniently Supplies the Quill and Dental Floss Indispensable for Use After Eating to Prevent Decay. Each Toothpick contains one yard Spool of Floss.

Dr. E. T. Darby of the University of Pa., Philadelphia, writes: "The two, if faithfully used, will do more toward saving the teeth than all the Tooth Brushes in America."

AT ALL DRUGGISTS.

HORSEY M'F'G CO., Utica, N. Y.

IV.

The moment has come to reveal everything. This infamous Valade did not believe a word of all this nonsense. It was all humbug. But what was true was that friend Michel had an income of two thousand dollars, and that it was proper to appropriate them without danger. Well, it was done. How patiently he had been obliged to wait for the propitious hour! How difficult it had been to lead him, unawares, to this conception of the suicide of one of them! He had been obliged to let him believe that the idea came from him, and how well he had "caught on!" And the drawing lots! What a marvelous thing! There were only two number ones in the hat! What an ingenious means for not making a mistake!

He was dead, poor friend! And when a man is dead it is for a long while, as the proverb says, in spite of all the spirits in the world. He was on the other side; as for his returning to this side, that was another question.

Ten minutes afterwards Mr. Valade ran to the village doctor, who, in his turn, ran to the house. Oh! the death was evident. The cause was obviously heart disease. It was a sudden death that science could not prevent. Mr. Valade said: "Poor friend," in wiping a tear, and the doctor replied: "Poor Mr. Valade!"

Ah! there were two men who loved each other fondly!

Mr. Valade declared that he would watch by his friend; he owed him that, at least.

V.

At 2 o'clock in the morning Mr. Valade, with the tranquility that is one of the characteristics of a calm conscience, snored loudly in an arm-chair. He was dreaming; and what sweet dreams! Paris, the boulevard, good dinners, and everything that heart could wish. Ten thousand and one thousand, that makes eleven thousand francs income! Forty and odd louis a month! and he was not yet fifty. There were still some fine days ahead of him!

Suddenly he woke up. It seemed to him as though he heard a noise, a sort of grazing.

Impossible! The body is there, cold and dead, in the alcove. Valade is alone. He has made a mistake!

No! The bed-curtains are half drawn aside, and by the dim light of the lamp Valade sees a vague form and hears a hollow, sinister voice say:

"Friend, I have come back to keep my promise."

Valade jumped, cried, and wrung his hands.

"It is, then, true, that you have come from the other side?"

And in his atrocious fright he was seized with a sudden congestion, and fell back dead.

Mr. Michel, who had come out of his lethargy (the liquor had evidently lost its force), felt very sad at the death of his excellent friend, and murmured:

"So it's not for this time! How long will it be before I find another co-worker in whom I shall have as much confidence?"

NEW YORK BEEF.

SHOCKING CHARACTER OF OUR LOCAL MEAT SUPPLY.

Beeves, with broken and bleeding horns, bruised eyes, swollen tongues and lacerated hides are daily arrivals at the Jersey City stock yards, from which New York gets its fresh meat supply. Their long journey from the Southwest has made them wholly unfit for food, but they go to the butcher without delay, are put out of misery in an incredibly short time, and eaten at breakfast next morning. One of the mysteries of human existence is the blind faith of people in what they eat. New Yorkers seldom complain. The population of the city is so graded that food which is rejected by one class is seized with avidity by another. The middlemen—dealers who stand between supply and demand—waste nothing. If a case of hams or a carcass of beef be too rank for the palate of the Portuguese quarter—a rare circumstance—it is shipped to the West Indies and sold at a fair price to the natives, some of whom do not class above the carrion crow in the matter of voracity. In the transportation of long-horned Texas cattle, shippers have been unable to find any way of keeping them from goring each other and breaking bones in closely crowded cars. To this may be attributed, in a large degree, the success of the dressed beef business. But the practice of dehorning calves is becoming common throughout all the cattle-growing regions of the West and Southwest, and in a few years we shall have to record the disappearance of the antlered monarchs of the plains. This dehorning process begins with the sucking calf and consists simply in the destruction of the horn matter as soon as it forms itself into small knobs at the extremities of the skull. Dehorned cattle, being disarmed, never fight, and may be shipped without injury to themselves or each other.—*N. Y. Tribune Oct.* 23.

STEAM DISINFECTION.—According to experiments conducted by the Health Board of New York, it appears that dry heat of even 280 degrees is insufficient to kill disease germs, except in cases where the fabric is perfectly dry, or so loosely rolled or folded that they can penetrate it. But by injecting live steam into the tank, Dr. Edson's assistants have been able to disinfect clothing and bedding at a temperature of about 160 degrees, and the goods come out of the tank unhurt, except that the colors in some kind of cloth are effaced or badly mixed. The disinfection by steam is rapid and satisfactory. Iron cages are being prepared for the collection of bedding and clothing. Each cage has a lock to it, and the owners of clothing can keep the key while the goods are being disinfected. The work is done by the Health Department, free of charge.

IN THE WRONG PLACE.—Silver, generally a very desirable metal, is a source of great annoyance in the manufacture of white lead, for if present in an appreciable quantity it spoils the color of the finished product, owing to the well-known blackening effect of light upon the salts of silver.

The Standard of Excellence.

KINGSFORD'S

OSWEGO

Pure and Silver Gloss



STARCH

KINGSFORD'S

OSWEGO CORN STARCH

FOR

Puddings, Custards, Blanc-Mange, Etc.

THE PERFECTION OF QUALITY.

WILL PLEASE YOU EVERY TIME.

Always ask your Grocer for these goods.

COLDEN'S LIQUID BEEF TONIC.

ORIGINAL LABEL:
"Colden's Liebig's Liquid Extract of Beef and Tonic Invigorator."

AN INVALUABLE AID IN THE TREATMENT OF ALL CASES OF DEBILITY.

Established 15 Years. Endorsed by Scores of Physicians. Essentially Different from all other Beef Tonics. Beware of Imitations.

COLDEN'S LIQUID BEEF TONIC consists of the Extract of Beef (by Baron Liebig's process), spirit rendered non-injurious to the most delicate stomach by extraction of Fusel Oil, soluble Citrate of Iron, Cinchona, Gentian and simple aromatics. An official analysis of this preparation by the eminent chemist ARTHUR HILL HASSALL, M. D., F. R. S., and an endorsement by SIR ERASMUS WILSON, F. R. S., is printed on the label of each bottle.

Its Range of Action Embraces all Cases of Debility.

By the urgent request of several eminent members of the medical profession, I have added to each wineglassful of this preparation two grains of SOLUBLE CITRATE OF IRON, and which is designated on the label as "No. 1," while the same preparation, without Iron, is designated on the label as "No 2."

It acts directly on the sentient gastric nerves, stimulating the follicles to secretion and gives to weakened individuals that first pre-requisite to an improvement, an appetite.

☞ *I will, upon application, send a sample bottle of* ***Colden's Liquid Beef Tonic*** *to any physician in regular standing. Please ask your Dispensing Druggist (if he has not already a supply) to order it. In prescribing this preparation physicians should be particular to mention "COLDEN'S" viz: "EXT. CARNIS. FL. COMP. (COLDEN). It is put up in pint bottles and can be had of Wholesale and Retail Druggists generally throughout the United States.*

C. N. CRITTENTON, Sole Agent,

115 Fulton Street, N. Y.

Please Mention the AMERICAN ANALYST.

FRENCH DISHES.

THE MEANING OF THE TERMS FOUND ON BILLS-OF-FARE.

[Translated and Explained by the AMERICAN ANALYST.]

(*Concluded.*)

[NOTE.—It is not our purpose to furnish a complete dictionary of French words used in cooking and on bills-of-fare, but only to give free translations of those terms most frequently found, the full understanding of which would possibly conduce to the readers' enjoyment of the dinner table. Incidentally, also, some practical hints are given as to the composition of many of the more popular French dishes.]

Queuelles de chapon à la sevigné	Capon dumplings.
Quartier de chevreuil piqué, sauce poivrade	Roast venison larded with high seasoning.
Radis	Radishes.
Ragoût de bécasses	Snipe stew.
" de canard, sauce brune	Duck stew with brown butter sauce.
Ragoût de chapon	Capon stew.
" de mouton aux navets	Mutton stew and turnips.
Ragoût de pigeon	Pigeon stew.
Raisins	Grapes.
Raisins secs	Raisins.
Ris de veau	Calf's sweetbread.
Risolles de boeuf	Beef croquettes.
Rognons d'agneau	Lamb's kidneys.
" d'agneau rotis aux haricots	Roast loin of lamb with white beans.
Rognons de mouton	Sheep's kidneys.
" de mouton à la brochet	Boiled sheep's kidneys.
Rognons de porc au Medère	Kidney stew, Madeira sauce.
Rosbif à la jardiniere	Roast beef garnished with vegetables.
Rouélle de veau au jambon	Veal filets and ham.
Salmi de bécasses	Pot-roasted snipe.
Salmi de canard gelée	Duck stew with jelly.
Salmis de paisan	Pheasant stew with truffles.
Sanglier	Wild boar.
Sarcelle de canard roti	Roast teal.
Sardelles	Anchovies.
Sardines à l'huile	Sardines in oil.
Saumon	Salmon.
Saumon à la monseigneur	Boiled salmon with brown sauce and salmon roe.
Saumon à la Richelieu	Pickled salmon roasted with tomato sauce.
Saumon fumé	Smoked salmon.
Saumon, sauce Genevoise	Salmon with Calvinistic sauce.
Sauce à la Diable	Spanish sauce, with claret, parsley, garlic, cayenne pepper.
" " Duchesse	White wine, minced ham and mushrooms.
" Duxellès	Brown sauce with Rhine wine, finely cut herbs and hashed tongue.
" à la financiere	Spanish sauce with truffles and mushrooms.
" " Genevoise	Brown sauce with claret, anchovies, minced mushrooms and parsley.
" " Maitre d'hôtel	Butter sauce with chopped parsley and lemon juice.
" " Matelotte	Ham, onions, herbs, white wine, Bordeaux and fish broth.
" " menthe	Mint sauce: finely cut peppermint leaves, sugar, salt, water and vinegar.
" " moutard	Mustard sauce: butter sauce with mustard.
" " Perigueux	Truffle sauce: Madeira sauce with truffles.
" " polonaise	Brown sauce with mushroom, catsup and white wine.

BURNETT'S PERFECTLY PURE HIGHLY CONCENTRATED Standard Flavoring EXTRACTS

THE superiority of these Extracts consists in their

PERFECT PURITY AND GREAT STRENGTH.

There is no subject which should more engross attention than the purity of the preparations which are used in flavoring the various compounds prepared for the human stomach.

They are not only true to their names, but are prepared from fruits of the best quality, and so highly concentrated that a small quantity only need be used.

JOSEPH BURNETT & CO., Boston, Mass.

Sauce à la Ravigotte	White sauce with herbs, tarragon vinegar, pepper, yolk of egg and mustard.
" " Regence	Brown sauce, parsley, onions, mushrooms and Madeira wine.
" " Russe	White sauce with sour cream, herbs, vinegar and grated horseradish.
" " Toulouse	White sauce with yolk of egg, truffles and mushrooms.
" " Vénitienne	Green sauce: Rhine wine and minced herbs.
" " Villeroi	White sauce with cream and yolk of eggs.
" " Vinaigrette	Anchovy sauce, pickled onions, salt, pepper vinegar and oil.
" à l'essence d'anchois	Anchovy sauce.
" Allemande	Eggs, cream, and lemon juice.
" Anglaise	Vinegar, mustard and pepper.
" au beurre d'écrevisse	Crab sauce: sauce with crab broth, yolk of egg and crab claws for decoration.
" au vin de Madère	Brown sauce with mushroom, catsup and Madeira.
" aux amandes	Almond sauce.
" " apricots	Apricot sauce.
" " capres	Caper sauce: butter sauce with capons and tarragon vinegar.
" " fraises	Strawberry sauce.
" " homards	Lobster sauce: butter sauce flavored with lobster.
" " huitres	Oyster sauce: white sauce, yolk of egg, oysters, butter and lemon juice.
" " pêches	Peach sauce.
" Béarnaise	Yolk of egg, butter, meat extract, pepper, salt and lemon juice.
" Bechamel	White sauce with sweet cream.
" Bigaradé	White sauce with pomegranates.
" Bordelaise	Spanish sauce with Bordeaux wine and cut parsley.
" Brétonne	White sauce with onion juice and Rhine wine.
" citron	Lemon sauce.
" Cumberland	Bitter oranges, sugar, claret, and English mustard.
" demi glace	Veal stock with Rhine wine and brown sauce.
" douces	Sweet sauces.
" Espagnole	Brown sauce, Rhine wine and lemon juice.
" Génoise	Spanish sauce: shallots, vinegar, gherkins, parsley, pepper and beef stock.
" Hollandaise	Whey and butter sauce, with herbs and lemon juice.
" Italienne	White sauce, with Rhine wine and herbs,
Sauce mayonnaise	Yolk of egg rubbed up with oil and vinegar.
" Normande	White sauce with cream; Rhine wine, yolk of egg, and the liquor of fish, oysters and mushrooms.
" piquante	Brown sauce, with Rhine wine, butter, lemon juice, minced capers, mushrooms and parsley.
" poivrade	High seasoning.
" raifort à la crême	Horseradish sauce.
" Remoulade	Yolk of egg, shallots, tarragons and mustard in oil and vinegar.
" Robert	Brown sauce, Rhine wine, onion juice, mustard and mushrooms.
" Suprême	White sauce, with cream, chicken gravy, truffles and mushrooms.
" Tartare	Tartar sauce: yolk of egg, tarragon, shallots, rubbed up in vinegar and oil.
" Valois	Chopped shallots, parsley, yolk of egg, vinegar and poultry stock, with brown sauce.
" velouté	Veal broth.
" veloutée	White sauce with mushroom catsup.
Selle d'agneau roti	Roast saddle of lamb.
" mouton	Saddle of mutton.
Selle de mouton à la Bretonne	Saddle of mutton, with beans.
Selle de mouton à la soubisse	Saddle of mutton, with onions.
Semoule	Farina.
Soufflés	Sweet baked omelets.
Soupe a la tortue	Turtle soup.
" " l'oignon	Onion soup.
" aux perdrix	Partridge soup.
Tête de veau	Calf's head.
" " à la vinaigrette	Calf's head in vinegar and oil sauce.
" " en tortue	Calf's head in jelly.
Timbale de chapon	Capon patty.
Tourte	Tart.
" Génoise	Almond tart.
" Portugaise	Raspberry tart.
" Rousse	Pineapple tart.
" Sableuse	Sponge cake.
Truite saumonnée	Salmon trout.
Trauche de veau à la Viennoise	Breaded veal cutlet from the leg.
Un quart à agneau roti	Roast quarter of lamb.
Veau	Veal.
Volaile	Poultry.
Vol au vent	Puff paste meat pie.
Vol au vent aux truffes	Truffle pie.
" " " d'alouettes	Lark "
" " " de cailles	Quail "
" " " de cervelle	Brain "
" " " de faisan	Pheasant pie.
" " " de lâgumes	Vegetable "
" " " de perdraux	Partridge "
" " " de pigeons	Pigeon "
" " " de volaille	Chicken "



SODA WATER.

WHAT IT IS, HOW MADE, AND WHERE USED.

More than twenty thousand gallons of soda water are drunk in this city during a warm day. This is the estimate of a manufacturer who turns out 8,000 gallons a day. In the manufacture of soda water, as in that of ice cream, America is ahead of Europe. Across the water they do not use the dispensing apparatus which is so common in every drug store and confectionery store here; they serve it only in bottles and siphons. The business has developed enormously within the last half century. There are now about twenty-five thousand of these "fountains," as they are termed, gushing the popular effervescing drinks into glasses and down the thirsty throats of people in this country. This estimate is also arrived at by the manufacturer upon the basis that a trifle more than 15 per cent. of the whole number of "fountains" manufactured are now in use. The big firm referred to has made more than 100,000 of these fountains altogether. Twelve hundred were broken up in this factory in one year because they were found to be of an objectionable make. The present sale of this establishment is about 2,500 of all kinds a year. But the output is constantly increasing. A hundred different kinds of machines are now in fashion and kept on hand, costing from $78 to $4,200 each. A good many in unique designs are built to order for customers. One sent to the London Exhibition last year cost $10,000 to make; this was the biggest thing yet attempted, and rather astonished the eyes of the Englishmen. The name "soda" water, by the way, as is now generally known, is an entire misnomer for the effervescing drink. It was possibly given to it by some obscure manufacturer, who wanted a name of his own in the early history of the business and stuck to it. The more proper term is carbonade. Bicarbonate of soda could be used in the manufacture, but it wouldn't pay. The article as now used is simply water impregnated with carbonic acid gas—the same gas which operates in the "raising" of bread or anything of that sort. The ingredients used in generating carbonic acid gas for soda water are few and simple, and have long been standard articles in the markets of the world. The two necessary materials are a carbonate of some kind and an acid, by a union of which with the carbonate the gas is chemically evolved. Experimentally, a great variety of acids and carbonates have been employed. For practical purposes sulphuric acid is now admittedly superior to any other, but as for the carbonate, pulverized marble, whiting and bicarbonate of soda are still competitors for favor. The gas is generated according to the American system in an apparatus for the purpose, the gas, after its evolition from the marble, being carried through three washers, where any impurities are caught off by additional chemical appliances. It is then put into the steel fountains, ready for transport, by a process especially devised to suit the exigency. The regulation size fountain will hold fifteen gallons. Ten gallons of Croton water, which has been filtered through charcoal, sand and gravel, are first put into it. Then the fountain is placed upon a shaking machine and the gas forced into it under pressure, while the shaking thoroughly impregnates the water with the gas. The fountains are made to stand a pressure of 500 pounds to the square inch, being of steel, with block tin seamless lining, but the pressure of the gas is but 150 pounds to the inch. The marble used in the manufacture is the white snowflake, found up the Hudson, and said to be the best for the purpose, containing 99 per cent. of the carbonate of lime and magnesia. When the water is filtered as thoroughly as it is for that purpose, the product in the fountains will keep for any length of time, and an export trade is now being built up in the article. Spain has been the first country to make a start, and several generators and fountains have been lately sent there. One generator of the size ordinarily used here will make about 2,475 gallons of gas at a charge—enough to supply 750 gallons of water. The English system of manufacture is to store the gas in a gasometer, and pump it into bottles when desired for use. The largest firm of the kind in this city controls now about two hundred patents in the various departments. It manufactures not only "soda" water and all the appliances of fountains and fixtures for dispensing it, but also the fruit syrups, boxes, and other details required, even shoeing their own horses. "Soda" water is kept on tap in the factory for the refreshment of the hands, the same as lager beer in breweries, or ice water in ordinary establishments. Between three and four hundred men are employed during the busy season, from January to July, chiefly making dispensing apparatus and fixtures. After the Fourth the demands of those going into the business has been pretty well supplied, and the work of the factory is cut down to the manufacture of supplies for the "plant." "Soda" water is also used about the factory premises as a fire extinguisher. The most popular flavoring for soda is the same as for ice cream—vanilla—about one person in every three calling for it. Lemon ranks next and sarsaparilla next, after which the various flavors are about on a par as to popularity. Hot soda, so-called, now so commonly supplied in winter, is merely hot water flavored with the ordinary syrups. A special fountain is supplied for dispensing this from the ordinary apparatus. The ordinary purchaser of five-cent glasses of soda water does not realize that he is giving about 250 per cent. profit to the dealer. But here is what a circular of the above-mentioned firm says about it:

The profits which dealers in carbonated beverages may reasonably hope to make can be readily inferred from the following accurate estimate of the cost of manufacturing each beverage:

One glass of plain soda costs one-tenth of a cent.
One glass of soda water with syrup costs 1½ cents.
One glass of mineral water costs 1 cent.
One glass of root beer costs 1 cent.
One glass of ginger ale costs 1½ cents.
One glass of fine draught champagne costs 4 cents.

A VALUABLE INVENTION.—The Westinghouse Electric Company has just perfected an incandescent lamp which is expected to burn from 2,000 to 3,000 hours without discoloration.

SPIDER POISONS.—Professor Breeger has recently investigated the poisons of spiders. He found that the Russian varieties of spider, *Phalanchium* and *Trochosa* (Tarantula) are non-poisonous, but that a third, *Caracurt* or "Black Wolf," secretes a powerful poison forming 25 per cent. of its whole weight. This substance is a peculiar unstable alkaloid, destroyed at 60 deg. C. or by alcohol. Introduced into the circulation of warm-blooded animals, one-thirtieth of a milligram per killogramme of the animal treated was sufficient to cause death. It exceeds in power all known vegetable principles, and prussic acid, being comparable in toxicity with the poison of snakes.

CURIOUS FOODS.

THE VARIOUS PREFERENCES OF VARIOUS NATIONS.

A species of bat is considered good eating by the natives of the islands of the Indian Archipelago, Malabar, &c.; it is called by naturalists the edible bat, and is said to be white, tender, and delicate; but, for all that, it is a hideous beast like a weasel, with a ten-inch body, covered with close and shining black hair, and with four-feet wings, when stretched to their full extent. In some countries the fox is considered a delicacy; in the Arctic regions, where fresh meat is scarce, when judiciously made into a pie, it is considered equal to any rabbit. But, stange to say, the Esquimaux dogs, which will devour almost anything else, will not touch fox. Cats and dogs readily find purchasers and consumers in China, where they are hung up in the butchers' shops, together with badgers, and other oddities of food. They are said to taste something like wild boar. In the South Seas, a dog is a favorite dish, and a puppy-stew is a royal feast in Zanzibar; but it is only fair to say that where dog is eaten, it is especially fattened for the table, and fed only on milk and such like cleanly diet. The Australian native dog or dingo is eaten by the blacks, but by no one else; and a South African will give a cow for a good sized mastiff. The American panther and the wild cat of Louisiana are said to be excellent eating; so is the puma, which is so like veal in flavor that one hardly knows the difference. Lion's flesh, too, is almost identical with veal in color, taste and texture. Bear's paws were long a German delicacy; and the flesh is held equal or superior to pork, the fat being as white as snow. The tongue and hams are cured, but the head is accounted worthless, and thrown away. The badger tastes like wild boar; the Australian kangaroo is not much inferior to venison, and kangaroo-tail soup is better than half the messes which pass under the name of ox-tail soup. Hashed wallaby is a dish no one need disdain, and there is a small species of kangaroo as good as any hare ever cooked. An Australian native banquet is an odd mixture. Kangaroos and wallabies, oppossums and flying squirrels, kangaroo-rats, wombats and bandicoots, represent the *pièces de rèsistance;* while rats, mice, snakes, snails, large white maggots, worms and grubs form the little side dishes and most favored entrées. A nice fat marmot is a treat—why not? They are pure feeders. The musk-rat of Martinique is eaten, though indescribably loathsome to a European; but the sleek rats of the sugar-cane plantations make one of the most delicate fricassees imaginable—so tender, plump, cleanly and luscious are they. The Chinese are in a rat paradise in California, where the rats are enormously large, highly flavored and very abundant; rat-soup being considered by all right-minded Celestials to beat hollow ox-tail or gravy soup. The Indians eat the beaver, which is said to be like pork; and porcupine is a prime favorite with the Dutch and Hottentots of the Cape, and with the Hudson's Bay trappers, and indeed, with the inhabitants of all the countries where the creature is found; the flesh being good and delicate, and, moreover, accounted exceedingly nutritious. Elephants' feet pickled in strong toddy, vinegar and cayenne pepper, are considered in Ceylon an Apician luxury. The trunk is said to resemble buffalo's hump. Hippopotamus fat is considered a treat; when salted, it is thought superior to our best breakfast bacon; and the flesh is both palatable and nutritious, the fat being used for all the ordinary uses of butter.

AGRICULTURE.—It appears that 44 per cent. of the earnings of mankind are agricultural, but in the United Kingdom the rate does not exceed 21, and even in the United States it is but 38 per cent. On the other hand, in Russia it is 67, in Spain 60 per cent., both of which countries are very poor. It is only by the use of improved machinery that agriculture can now be carried on with profit, and in this respect Russia and Spain are still very backward.

American Analyst,

Published on the 1st and 15th of each month.

Subscription, - - - - - - $1 per year.
Single Copies, - - - - - - 5 cents.
Subscriptions to foreign countries, - $1.50.

Remit by Express Money Order, Draft, P. O. Order, or Registered Letter.

Advertising rates on application.

EUROPEAN AGENCIES.

On file at "American Exchange," 449 Strand, London; and American Exchange," 35 Boulevard Des Capucines, Paris.

THE ANALYST PUBLISHING CO.,
Publishers.

H. LASSING, M. D., } ***Editors.***
T. P. McELRATH, }

No. 19 Park Place, ... New York.

NEW YORK, NOVEMBER 1, 1888.

CORRESPONDENTS AND EXCHANGES.

Please direct all business communications to

THE AMERICAN ANALYST,
19 Park Place,
New York.

ANSWERS TO CORRESPONDENTS.

HOUSEKEEPER.—A simple description of the process of refining lard is that the fat, as fresh as possible, is treated in a boiler with steam at 60 to 80 pounds for 6 or 8 hours. The separated lard is floated off by adding water to the boiler, or all is run off together and the lard separated when cold.

W. S., Schenectady.—Rabbits are rapid breeders. It has been positively stated that a pair of rabbits will produce 2,000,000 in two years, in Australia. A pair will usually produce four does and two bucks. The does breed when two months old, and they have on an average four litters a year. You can calculate from this, and you will find that the statement that a pair will produce 2,000,000 in two years is not preposterous.

LUCIFER.—*What are the safety-matches, which light only on the box, made of?* The ingredients, usually composing the business end of the match, are divided so that neither portion can ignite by friction without contact with the other portion. The portion on the end of the match, the wood of which is previously prepared by a coating of paraffin, consists of chlorate of potassium, sulpide of antimony and glue; and the portion on the box is composed of phosphorus, binoxide of manganese, sand and glue.

ALEUTIAN.—People generally have little idea of the significance of our Alaskan possessions. The coast line of Alaska, 18,211 miles, is nearly twice the combined Atlantic and Pacific coast lines of the United States. The market value of the Alaska fisheries for last year is estimated at $3,000,000. A thousand salmon, averaging ten pounds each, have been taken in Sitka Bay in a single haul. The seal fisheries yield to the government $317,500 annually, or enough to pay 4 per cent on the amount paid Russia for the country. A single island is said to be practically a mountain of ore, and to contain mineral wealth enough to pay off the whole of our national debt.

H. F.—The most plausible and simple explanation of the phenomenon of thunder that we have seen is that the sound is due simply to the fact that the air traversed by an electric spark, that is, a flash of lightning, is suddenly raised to a very high temperature, and has its volume, moreover, considerably increased. The column of gas thus suddenly heated and expanded is sometimes several miles long, and as the duration of the flash is not even a millionth of a second, it follows that the noise bursts forth at once from the whole column, though for an observer in any one place it begins where the lightning is at the least distance. In precise terms the beginning of the thunder clap gives us the minimum distance of the lightning, and the length of the thunder clap gives us the length of the column.

POOR FOOD ADVOCACY.

Our contemporary, *The Butchers' Advocate*, commenting on our advice to the public to buy Chicago dressed beef as a safeguard against diseased meat, asserts that diseased meat can be refrigerated and transported in a marketable condition. It needs no argument to convince any sensible person that such a statement is absolutely false. Decomposition can be arrested but not cured. *The Advocate* asserts that spoiled meat can be so manipulated as to deceive a judge of meat. If this is so, but we doubt it, the New York butchers have the monopoly of the knowledge, for the Chicaga beef-dressers have never been able to do it. It must be in some such way, that the few New York beef-dressers, have been able to make beef salable which has been killed in slaughter-houses of such miserable, unsanitary construction that it took an uprising of the ladies of New York, in the face of political and financial opposition such as had never been heard of before, to even have the condition of these shambles so slightly improved that people could live within a mile of them without being made ill by their foul odors. To say nothing of the necessarily unwholesome condition of meat dressed in such filth, it is abominable to think of having to eat such stuff. New Yorkers who have become accustomed to seeing the New York beef-dressers sending the products of their charnel-houses to market in open wagons with the drivers sitting on the meat, may have become inured to it, but no one who has ever seen the Chicago establishments or their large depots in other cities where clean, healthy-looking beef is carefully handled in a cleanly manner, as if the food were intended for human beings and not for hogs, would ever dream of denying our statement or ignoring our advice to buy only Chicago dressed beef. Self-interest alone can be depended on to prevent Chicago beef-dressers from buying diseased cattle or from dressing any but the best and assuredly wholesome meat. No other than healthy meat will stand transportation, and these Chicago dressers are not so foolish as to risk their capital, profits and reputation on the uncertainty of railway delays. It is this same self-interest, if nothing else, which makes these men so cleanly for they well know that any uncleanliness will rapidly deteriorate their meat. Local butchers having an immediate market can safely run the risk, and as the New York beef-dresser is unknown to the consumer, can sell almost anything. The ridiculous stories published by *The Butchers' Advocate* to bolster up the rapidly declining business of the New York charnel-houses are too silly to repeat much less to refute. Let the butchers improve their establishments and buy a better grade of cattle than dried up-cows and yoke-worn oxen, and our advice will no longer be necessary. Until then let their advocates confine themselves to facts or we shall be compelled to furnish some still more unpalatable truths to prove the correctness of our position.

APOLLINARIS.

To those who drink this water in the United States, it may be interesting to learn that in a paper read lately before the American Pharmaceutical Association at St. Louis, it was openly charged that the Apollinaris and Taunus-brunnen have placed between the spring and the carbonating apparatus settling vats, in which the iron becomes oxidized and precipitated, and strengthening vats, in which salt is added to the settled water, for better preservation, before it is charged in the apparatus with an excess of carbon dioxide. The *Western Druggist* says: "Well-informed persons in Germany assure us that the Apollinaris spring produces only about 2,000,000 bottles annually; whence do they obtain the 9,000,000 necessary to complete the yearly sale of 11,000,000 bottles as advertised in the papers? The mystery is strictly guarded by "No admission" at the gates of their factory, and the American people continue to be deceived as to the real nature of this water by advertisements of glowing recommendations."

THE SOUL IN TENNESSEE.

We have received from the author, William James Parker, M. D., of Nashville, Tenn., a pamphlet entitled, "The Human Soul, its Origin and Analysis," with a request that we should give it a "notice" in our columns. We must confess that the subject discussed by Dr. Parker is one in which we do not claim to be deeply grounded, as we have, possibly through the defect of early education, been accustomed to regard the theme rather in relation to the future than to the past. What is to become of our immortal soul is a matter of much greater solicitude to us than any exercise of ingenious speculation as to its origin. Dr. Parker, however, has attempted to solve the primary problem, and it is due to that enterprising physician to concede that no previous investigator in the same field of speculative inquiry has, in our opinion, come any nearer than he has to its solution. In support of which conclusion we quote below the final paragraph of the pamphlet, italics and all. The passage thus reproduced is marked with the clearness that illuminates the entire production. With the subject thus plainly elucidated in Dr. Parker's masterly and convincing manner, the world may hereafter rest satisfied that the problem of the soul's origin is no longer any more of a mystery than it has always been. After all, though, it is the other end of the discussion that men's minds are most uneasy about:

A synopsis of conclusions deduced, is herewith, finally presented. *The Human Soul* is an immaterial, intangible and invisible entity, and originates ultimately *in*—or rather, emanates—in principles—*from* God—the Fountain of Souls. The Soul is a *dual unite—spirit and life.* As such—its *Origin* is registered at the embryo-fœtal rubicon. *Analysis* acquaints us with *life* (since the creation of Eve) as the immaterial transmission from earthly parents, but, that *spirit* is direct from the Creator. The Soul is the aggregate of a plurality of *faculties.* It is the momentum of mental, nutritive and mechanical *forces.* Spirit is executive force, life is basic. Spirit is subjective, life is rather objective. Spirit is good, life *may be.* . . . The difference between the *endowments* of individuals is due to physical organization. Consequently, the *vigor* of every faculty of Soul is due to the quality, size and health of the material counterpart. Spirit and life are *simple elements*, and go to make up *the one imperishable binary.* In being *the simplest binary*, it excludes all material diversity. By being indivisible by the law of chemism, it is, in its nature, distinct from, and independent of, corporiety. Our heredity is from God. The Soul of man is immortal. The mental imbecile, though he is an object of mercy, *his* Soul is immortal. But there is a gulf fixed between the souls of men and women, and those of "lower forms."

PEPPER ADULTERATION.

The microscopist of the Department of Agriculture, Prof. Thomas Taylor, has begun an examination of the condiments of commerce for the purpose of ascertaining which of them are adulterated, the methods and extent of the adulteration, and of discovering methods by which the consumer may detect impure articles. The first article treated was pepper, and the method of the investigation is here briefly described. A section of a pepper-corn is placed under a microscope, and magnified one hundred and fifty diameters. Its appearance is carefully noted and photographed, and a drawing in colors is made, showing exactly how it looks. The pure powder of pepper-corns is then treated in the same way, and, from a comparison of the image of this with that

of the section, the changes caused by grinding may be noted. The next step was to examine specimens of the pepper of commerce to ascertain if it presented the same appearance as the pure pepper already photographed and drawn. In a majority of cases it did not, the differences being so striking as to mark it as an entirely different article. Professor Taylor has ascertained that the substance used in adulterating pepper is the seed or stone of the olive. These are obtained in large quantities from the olive-oil factories, and ground up with the pepper-corns, the extent of the adulteration being in some cases as great as fifty per cent. No method of popularly defecting adulteration of pepper has yet been found. In bulk the pure pepper is darker in color than that to which olive-seeds have been added; but the difference is so slight that no person, unless possessed of a sample to compare with, would be able to discover any difference.

CORN—A NEW JOY.

AN AMAZING RHAPSODY WITH A PALATABLE SUGGESTIVENESS.

Business compelled me, a few days since, to an early morning ride over the West Shore railroad, and one of the many flitting glances that I cast upon the beautiful country through which I journeyed, rested upon a cornfield. The corn was evidently of a late growth, for the tassels were greenish-yellow still atop the stalks, and the silk decking the ends of the ears was not dull and dead. That reminded me of the fact that in the early autumn, when most people have become weary of sweet corn, we have really the freshest, juiciest and most deliciously flavored corn, not dried and hardened by the summer's heat, but clinging with virginal tenderness to the summer's warmth, yet braving the chilly winds that fall from the lowering clouds of the fall of the year. And I further recalled the fact that now, in our "cold storage" warehouses, intelligent men pile away sweet corn, in great quantities, to meet a demand for novel, charming, "out of season" dishes, in the late fall and winter. Must those dishes be always the three staple preparations, boiled corn, succotash and roast corn, the latter infrequent? Heaven forbid! Artistic development of the culinary possibilities of sweet green corn has hardly commenced, and yet unhappily ignorance and stupidity stand awfully in the way of mental illumination in this direction. I remember that years ago I told a fellow named Birdsall, a big cotton-mill owner in Lowell, of a delicious way of preparing corn, by grating it from the cob, mixing it with an equal quantity of finely chopped celery, and with proper seasoning, cooking the resultant batter in a pot of smoking hot butter or butter and salt fat pork blended. It was a dish of my own invention. That ass flopped his ears and said "Hee! Haw! How can you get green corn and celery at the same time." Well, I knew that I then could do so in New York or in Chicago, or even in Boston. Now, that which seemed so impossible to him is practicable all over the land. This being the fact, I have a suggestion to make to such of my readers as are gastronomes, for which I felt assured that they will, when they try it practically, rise up and call me blessed. Remember that I speak with authority and not as "one of the scribes" merely, for I used to run the best journal of artistic gastronomy that the world ever knew—called in its day *The Cook*. My suggestion to those worthy to employ it, and as an ancient Persian would have said "it is worthy to be graven with needles on the corners of the eyes for those who will profit by admonition" is as follows:

Cut your corn from the cob and cook it in a steamer, allowing no drop of water to touch it but in the form of steam. Meanwhile take of finely chopped beef, in abundant quantity, proportioned to your corn, and fry it in sweet butter, in which you have previously fried just a little garlic to give a mere suggestion of its presence as a developer of flavor. As the meat fries to a dry fibre and its juices are taken up by the butter, squeeze it out with a strong iron spoon against the edge of the skillet and flirt out the useless stuff. To this rich meat essence add cayenne, celery salt, salt, a pinch of Weber's imported spices and flavors if you can get them, and a little white pepper—or, if you can not get those combined spices, use a very little mace and thyme finely pulverized. Stir in a small cupful of mingled flour and water, to make a brown gravy. Pour this gravy over your steamed corn, in a deep tin dish. Upon it put a layer, a quarter of an inch deep, of grated Parmesan cheese. Shove the dish into a hot oven and bake until the cheese is a crust over the corn. Then serve. Blessed, dear, loving gods, how good it will be, when you apply that exquisite mess to your palate!

JAMES H. CONNELLY.

THE CIGARETTE ABOMINATION.

AN EARNEST PLEA FOR ITS SUPPRESSION.

The following earnest denunciation of the too prevalent cigarette nuisance, is copied from the *Journal of Commerce*, and will be heartily echoed by every self-respecting reader in the land:

If the inventor of an unmitigated nuisance deserves to be cursed by his own and succeeding generations, then the manufacturer who first produced the cigarette ought to face Mount Ebal all the days of his life, and leave his memory subject to the same anathema. There is not one redeeming feature about this abominable pest It is noxious to the smoker, and when used in public is a foul offense to the victims of his incivility. A cigar composed of fragrant tobacco may be tolerated even by those who make no use of the weed; and a lighted pipe may be submitted to, as persons who solace themselves away from their homes in that fashion, seldom intrude among those likely to object to it. But the cigarette, with its vile odors, finds its way everywhere, and is oftenest lighted where it is certain to be most intolerable. From the indecent cuts that herald its pet name to invited customers, all the way to the exhaled stench that signals its destruction, it is unwholesome, insalubrious, pernicious and debasing to all concerned. The obscene pictures on fences and dead walls all over the country, that advertise it to the public, fully symbolize the foulness of the practice that patronizes its production and sale. These immodest associations have contributed largely to introduce and confirm the baneful habit which makes the manufacture profitable; and not a few are lead to purchase and finally taught to use the injurious compound, for the sake of the meretricious wrappings and the sensual indulgence they are designed to foster. With regard to their evil effect on the health of the smoker, there are not two opinions among those who are best qualified to judge. Our most eminent physicians and chemists speak with united voice when they warn the public against the increased danger of poison from the deadly nicotine, and the injurious consequences certain to follow this indulgence. Even where the little roll is made of tobacco that might be smoked in a pipe without material injury, it is most unhealthy used in this form, when the contents are consumed in a free draught so near the lip. But in most cases the article offered to the public would be dangerous to health when smoked in any guise, along with the added fumes of the burning paper. One of the greatest evils connected with the invention is the special temptation thus offered to the use of tobacco by the young. No child ought ever be allowed to touch the weed in any form; but here we have it in its most dangerous guise prepared especially for the consumption of those who are yet in their infancy. A cigar or a pipe in the hands of a boy materially checks his growth, and seriously affects the vital processes necessary to the attainment of manly vigor. But young children cannot readily smoke tobacco in that way. Cigars are too costly and pipes are too cumbrous, and there is not time for the use of either. No judicious parent would allow his offspring to practice any such habit at home, and those at service dare not do it in the presence of their employers. For these reasons, few children, except those left to the education of the streets and docks, up to a recent period, were found to have acquired a taste for tobacco. The ragged waifs about our thoroughfares would pick up abandoned cigar stumps and light them, but rarely was a respectable boy of tender years ever known to indulge in this pastime. The introduction of the cigarette has produced a most alarming change in this respect, especially in all of our larger cities. There is hardly a boy or youth that is in any service away from home who has not learned to smoke. If employed upon errands outside his place of business he has hardly left the office door before he has lighted one of the little rolls he carries in his pocket. It costs him but a trifle, and can be thrown away and replaced with another as often as the opportunity presents itself where he can indulge without detection. The evil is two-fold: the boy is ruining his health, and he is making himself an intolerable nuisance by contaminating the air wherever he goes. A gentleman seldom smokes in the street or in any public place, or if one is so thoughtless as to do this, it is usually a cigar, the odor of which may be endured. But a boy with his cigarette will puff the offensive smoke in the face of every one he meets with that reckless freedom peculiar to this class of young Americans. We have described the evil with its attendant dangers to health, morals and manners, but it is not so easy to point out the remedy. Consigning the inventor to his deserved infamy will not stay the production, and no warning to the victims will suspend the traffic. Perhaps the wisest course to pursue, in view of the deleterious effects of the indulgence, is to legislate against the use of the cigarette in public. Boston became so indignant many years ago at the freedom with which tobacco was burned in the streets of that municipality, contaminating the atmosphere of its leading thoroughfares, that all smoking in public places was forbidden throughout the great metropolis under penalty of a fine of five dollars, to be imposed and collected by the nearest magistrate. The police were very diligent in enforcing the ordinance, and for a long period a visitor might spend weeks in the city and if he did not smoke himself might never once get the smell of a pipe or cigar. If such action was taken here the abuse would be greatly checked. Those most addicted to the use of the pernicious roll would be cut off from the indulgence, as they dare not smoke where they are employed and would not be allowed to do it at home. It is for the children that we are most solicitous, for the statements of our prominent physicians as to the blighting effects of the cigarette upon the young are made with increasing emphasis as they are brought to light in their practice. The public will be startled some day to find how many thousands of our boys have come to premature decay if not to death by this indulgence. It is time that something was done to stay the tide and introduce a thorough and radical reform.

THE DANISH EDISON.—The spectro-telegraph is not a new invention, but a Danish physicist, Dr. Paul la Cour —surnamed "Denmark's Edison"—has constructed a new spectro-telegraphic apparatus on a principle of his own, which promises to become important, and which he now exhibits at the Copenhagen Exhibition. On the high roof of the establishment National, some distance from the exhibition, he has placed an apparatus which, when seen from the exhibition grounds, shows a vertical steady spectrum. On being examined by a specially constructed telescope a number of red and blue dots and lines are seen to appear and disappear exactly in the same manner as the dots and lines on the tape of a Morse telegraphic apparatus. This is spectro-telegraphy, and by the aid of this apparatus and the telescope, messages may be transmitted at night with the same exactitude as by the electric wire. The invention will be particularly valuable in navigation, as for instance, two ships may signal to each other without any fear of being misunderstood, while the beam from a lighthouse or harbor light may be made to flash any message to a passing vessel.

TABLE EVOLUTION.

ANGLO-SAXON TABLE CUSTOMS AND BILLS OF FARE.

The ancient Briton has more than once been likened to, or compared with, the New Zealander, and a writer says: "They were, perhaps, more uncivilized, and quite as ignorant, and their abstinence from the flesh of hares and poultry, and, in the northern parts of the island, from fish, bespeaks a race who lacked at once industry and knowledge. Indeed, it is by no means certain that we do not wrong the New Zealanders by suggesting their possible inferiority to the Britons, seeing that the latter are very strongly suspected of being guilty of the most revolting cannibalism." They were clever enough to brew mead and ale, but wine and civilization were brought to them by their enemies, the Romans; invaders whom, for some reasons, they might have welcomed as "our friends, the enemy." They ate but twice a day, the last meal being the more important. Their seats were skins, or bundles of hay flung on the ground; the table was a low stool, around which British chiefs sat, and even in the locality occupied by modern Belgravia, tore their food with teeth and nails, or hacked at it with a wretched knife, as bad as anything of the sort now in common use in Gaul. In fact, they behaved generally at table in a manner that would make the modern Belgravian blush with shame for their descent. The Anglo-Saxons introduced four meals a day; they ate good solid joints of flesh-meat, boiled, baked or broiled. It would seem that in those days cooks were not of such an illustrious guild as that which they subsequently formed. A cook among the Anglo-Saxons was valued at very little higher than the calf he cut up into collops. He was a slave, and was as unceremoniously bequeathed in his owner's will as any piece of goods or chattels. At Anglo-Saxon feasts, men and women sat together, as they do now, which is a mark of civilization, and pronounced very refining. Turkey in Europe is the only nation that does not follow this capital example, and Turkey is all to pieces, as we know; hence the deduction is simple, that when men dine by themselves, pop goes the nation. Tablecloths were used at Anglo-Saxon feasts, and the long ends were used as napkins, hence their condition would scarcely allow of a second use. They may have been some sort of rude display upon the board, but the style of the fittings would have upset the meekest coffee shop in the slums of Whitechapel. The meats were not dished up, but poked under guests' noses on spits by the attendants, who, by-the-by, were wont to kneel as they offered the succulent morsel. When the Normans came to England, they brought with them greater grandeur, but what often accompanies the same, greater restraint, formality and discomfort. Tablecloths were discarded, and forks were still unknown, but their bills of fare showed greater variety and costliness. "Their cookery," says a writer, "was such an improvement on that of their predecessors in the island, that Norman-French and Norman dishes flung the Saxon tongue and table into the annihilating position of vulgarity. The art was so much esteemed, that monarchs even granted estates on condition that the holder thereof should, through his cook, prepare a certain dish at stated periods and set it before the king." Under the Normans the celebrated boar's head became a royal dish, and its progress from the kitchen to the banquet was under the escort of a guard, and heralded by trumpeters. The crane was then what the goose is to us—highly esteemed, yet almost too coarse for refined palates. The peacock was only seen at tip-top tables, and then it appeared in all the panoply of its tail and trimmings. But with all this magnificence, the drinks were of a very undecided character, being syrupy and spicy, or only cider, ale and mead. For the first two centuries after the Norman conquest, cooks and kings improved in their styles of eating and drinking. Richard II. entertained ten thousand guests daily at his numerous tables, and the Earl of Leicester is said to have spent 22,000 pounds of silver in one year for eating. "His household retainers drank no less than three hundred and seventy-one pipes of wine in the same space of time." At great banquets the dishes were reckoned by thousands, and kings in vain dictated decrees denouncing such dinners, but neither cooks nor guests seemed to pay any attention to it at all, beyond altering the number of meals to two; but these were connected by such a savory chain of "intermeats," now known as *entremêts*, and refections, that the board was spread all day long, and guests were never weary. About this time also the purer wines of France, Spain, Syria and Greece became known in Britain.

THE TRUE REASON.

ADULTERATIONS DUE TO THE RETAILERS' RAPACITY.

Science has done much to improve in every respect the preparation of many of the food products that we place upon our tables. It would not be necessary to go back many years to prove it. Take in the line of vegetables alone and see the great change that has been made. Our readers can well remember the time when, if a family wanted corn for winter use, they had to dry it themselves or go to the grocer for it. Now a person can purchase his can of corn, and in a few minutes have a dish equal to fresh corn from the cob itself. So with all kinds of vegetables, fish, meats, and about everything in the line of canned goods. Instead of the wife worrying over what to get for dinner when company unexpectedly has arrived, she can in a few moments prepare a most palatable dinner. There is the great variety of prepared soups for her to select from; fish, canned meats, vegetables, games, plum puddings, and so on to the end, enabling her in a few minutes to get up quite a dinner that would have required hours years ago to have gotten up. This, of course, is one of the advantages derived from living in this age, all of which we should be profoundly grateful for. One thing, however, must not be left out of sight, and that is, that, while improvements have been made in the preparation of food products, competition has been so great as to cause the genius of man to invent and put upon the market many articles that imitate the original so closely as not to be detected, except by experts. While many of these are wholesome as well as harmless, there are others that the same cannot be said of. We know cotton-seed oil is palmed off as pure and genuine olive oil; glucose used in syrups, candies and even beer; corn whiskey made into white wine and cider vinegar, and so on. Our State has done much towards protecting the consumer from imposition and fraud in food articles, and doubtless many other laws will soon follow, all having the same tendency. To-day every manufacturer must brand his canned goods, with the name of the firm and where packed. No substitute for butter can be sold in this State that has any coloring matter in it, and if it has none even then it must be branded. While we believe the former unjust, we are heartily in sympathy with the latter. Doubtless the same kind of a law will soon be passed concerning pure leaf lead and that which is not, cheese and other food products. Every effort made by the individual or individuals for pure food should receive the hearty and earnest support of every man, woman and child in the land. The people are now demanding pure food, and the retailer who is so short-sighted as not to meet that demand must eventually retire from business. True, there is a class of persons who do not care so much about quality as they do the price, yet this class is in the great minority, and when the daily laborer, mechanics, and men engaged in all branches of trade learn the fact that it is cheaper to go to such and such a grocer, and pay a cent or so more and get a better article than they have been paying for, they will do so. The American is quick to learn, reads the papers, consults over market reports, looks over his account book, and when he occasionally goes to some new grocer for an article, and finds that article much better than he has been receiving at his own grocer's, there is apt to be a row. To-day pure goods in every shape and variety can be purchased from manufacturers, wholesalers and retailers; and that the consumer does not get them is not the fault of the manufacturer but the retailer, who is so anxious after the almighty dollar that he lends himself a willing and ready tool to the unscrupulous manufacturer. What does that retailer care about the purity of goods who has his shelves and windows filled with prizes to catch trade and deceive the consumers? He knows, and every intelligent grocer knows, that it is impossible to give purity and prices at the same time. Yet every city is filled with just such men, and local associations have many of them.—*Merchants' Mail.*

DEATH OF FATHER SCHLEYER.

ONE OF THE MOST LEARNED LINGUISTS OF THE WORLD.

The death of the Rev. Fr. Johann Martin Schleyer, the inventor of Volapük, the universal language, was announced on October 11th. The friends of Volapük throughout the world will hear with sorrow of the death of this distinguished man at the comparatively early age of fifty-seven years. He was a native of Konstanz, Baden, Germany, and was a retired Catholic priest, who had been for some years the recipient of a pension from the German Government in recognition of and in order to allow of a continuation of his philological researches. From his earliest youth he was remarkable for his love of language study, and his aptitude in the acquisition of different tongues. While still a young man he was impressed with the idea of the importance and necessity of some means of international communication, and in such a spirit he began the acquisition of foreign languages, which he kept up assiduously until he became one of the most erudite linguists the world has ever known. He was familiar with the grammatical construction of over fifty languages, of some twenty of which he had a conversational knowledge, and himself translated, unaided, his Volapük grammar into thirty languages. Having thoroughly equipped himself by over thirty years of arduous study, he at length, in 1879, gave to the world the plan of a universal or international language, which proved so simple, and withal so comprehensive and regular, that it almost at once sprang into general popularity among educated persons throughout the world, and it is estimated that in the short space of eight years since its inception it has been studied by 1,500,000 people. Previous to its introduction there had been over fifty attempts at solving the problem of a world speech, commencing over three hundred years ago; one of them, 'Alwato,' being the invention of the formerly well-known Bostonian and distinguished sociologist, recently deceased, David Pearl Andrews, better known as the "Father of Phonography in America," and ending with "World English," published a few months ago by the well-known scientist Professor Alexander Melville Bell, of Washington. All of these other attempts, however, proved failures, it being reserved for Father Schleyer, as he was affectionately called by his followers, to produce the only successful attempt at solving the problem. Its growth thus far has been marvelous, the only circumstance tending to retard its victorious progress being the somewhat general ignorance of its object. It is not intended to take the place of existing tongues for ordinary speech, but to become an easily-acquired medium of international communication and to supply the multiform needs of the merchant, traveller and scholar in this direction. It is estimated that a conversational knowledge of it can be acquired by an ordinarily bright person by three weeks of careful study, and for written communication in much less time. It has been translated into thirty-five languages, including Russian, Arabic, Japanese and Chinese, and twenty-five regularly-issued magazines in twenty different countries are entirely devoted to it.

DOMESTIC DIETETICS.

SPECIALLY PREPARED, FROM PRACTICAL TESTS, FOR THE LADY READERS OF THE "AMERICAN ANALYST."

SEASONABLE FOOD.

November.

MEATS.—Beef, mutton, ham, kidneys, liver, venison, sausage.

GAME AND POULTRY.—Grouse, hare, pigeon, partridge, quail, chicken, duck, turkey, rabbit, goose.

FISH.—Bass, blackfish, bream, clams, cod, crabs, eels, carp, catfish, flounder, halibut, herring, lobster, mackerel, mussels, oysters, perch, porgie, prawn, rockfish, salmon, sturgeon, smelt, turtle, whitefish.

VEGETABLES.—Artichokes, beets, beans, broccoli, Brussels sprouts, cabbage, carrots, cauliflower, corn, cucumbers, egg plant, garlic, lettuce, onions, parsley, parsnips, potatoes, savoys, shallots, spinach, squash, tomatoes, turnips.

FRUIT.—Apples, bananas, grapes, oranges, pears, pineapples.

PRACTICAL RECIPES.

VENISON SOUP.—Take one pound ham in small slices and four pounds venison that is freshly killed, and cut into bits. Add an onion cut up fine, and pepper to taste; cover with water, and stew gently in a covered pot for one hour; skim and add a quart of boiling water; add a head of celery in small pieces and two or three blades of mace; boil gently for two and a half hours; put in a quarter of a pound of butter, cut small and rolled in flour, and half a pound of Madeira or port; now boil a quarter of an hour longer, and send to table with the meat in it.

DEVILED LOBSTER.—Have ready one pound lobster meat, boiled and cut into small pieces; put one-quarter pound butter into a hot saucepan; add tablespoonful of flour and cook together, stirring constantly till they are smooth; then add a gill of rich cream; season with half or teaspoonful of curry powder, a saltspoonful of cayenne, the same of salt, one-third of a grated nutmeg, and one medium-sized onion that has been boiled soft and mashed to a paste; now put in the lobster and a raw beaten egg, stir all well together, cook for three or four minutes longer, and then pour out on a dish. When it has become cold, fill the tail part of the back shells with the mixture, wash over the surface with beaten egg, and cover with bread crumbs; lay the shells in a baking pan, put a few small pieces of butter on top of each, and bake them in a brisk oven to a nice yellow-brown color. Serve as hot as possible.

CELERY SALAD.—Cut off the roots of the celery clean, and cut the stalks into inch-long pieces. Make a plain mayonnaise. Pour over celery when just ready to serve.

JENNY LIND TEA CAKE.—Take four cupfuls flour, two-thirds of a cup sugar, one egg, one tablespoonful butter, and two heaping teaspoonfuls Horsford's baking powder; mix with sweet milk the usual thickness for cake. To be eaten hot with butter.

PICKLED CABBAGE.—This, either red or white, is cut into thin slices, and sprinkled with common salt or steeped in strong brine, and allowed to lie for one or two days. It is then drained for ten or twelve hours and put into jars. Prepare the spiced vinegar as follows: Four pints strong vinegar, two and a half ounces of salt, one-half ounce (bruised) black pepper, two and a half ounces (bruised) ginger, one-quarter ounce (shred) mace. Strain, and when cold add it to strong distilled vinegar. Pour this over the cabbage. Another plan is to steep the sliced cabbage in alum water for ten or twelve hours, and, after draining and drying it, to pour the vinegar on it as before. This process causes the cabbage to eat very fresh and crisp, but it takes longer to mature.

PICKLED CAULIFLOWERS.—As cabbage. But if crispness is an objection, steep them in hot brine, drain, and pour the cold vinegar over them.

TRIPE AND OYSTERS.—One dozen oysters, one-half pound tripe. Wash the tripe well, and cut it into small pieces; simmer slowly for three-quarters of an hour in slightly salted water. Take out the tripe, and to the water add a small piece of butter rolled in flour, and pepper and salt; if not thick enough, a little more flour. Put in the oysters and the tripe. Cook for a moment or two and serve.

COOKIES.—Take two cupfuls flour and two heaping teaspoonfuls Horsford's baking powder; mix together while dry. Beat together two cupfuls sugar and one small cupful butter; then add two well-beaten eggs and two tablespoonfuls sweet milk; now mix in the flour prepared as above, and add enough more plain flour to make a dough stiff enough to roll and cut.

CAKES.—Cocoanut maccaroons: To one pound of grated cocoanut take one-half pound of white sugar and mix well together; then add the whites of six eggs, beaten to a stiff froth; drop on a buttered pan in pieces the size of a half dollar.

GROUSE OR WOODCOCK, MARINADED (A GERMAN RECIPE).—Hang the birds as long as possible. Pluck, draw and wipe them dry with a soft cloth, and lay them in a marinade, made as follows: Mince an onion, and put it in a quarter of a pint of vinegar; add a dozen peppercorns, twenty juniper berries, and three bay leaves. Let the grouse remain in this three days, turning them three times a day, and bathing them frequently. Stuff them with turkey forcemeat, and lard the breasts with strips of fat bacon. Put them down to a clear fire, baste frequently, and serve with slices of lemon round the dish.

ADULTERATED OIL.—Olive oil is said to be adulterated by the oil from the seeds of *Fatropha purgans*. This oil has a specific gravity same as proof spirit, sparingly soluble in alcohol, forms acid soaps. It has also been employed as a substitute for castor oil, and for making Turkey-red oil.

AN EXPLANATION.—One might infer from the prodigious increase of nerve tonics in all the drug stores that nervousness among Americans is increasing to an alarming extent. But there is another explanation. Nerve tonics—most of them—contain that which both cheers and inebriates, and it is no disgrace to be seen in a drug store.—*N. Y. Daily Tribune.*

ROPE TENSION.—According to experiments recently made, the tensile strength of a wet rope is only one-third that of the same rope when dry; and a rope saturated with grease or soap is weaker still, as the lubricant permits the fibres to slip with greater facility. Hemp rope contracts strongly on being wet, and a dry rope twenty-five feet long will shorten to twenty-four feet on being wet.

HE WAS DISSIPATED.—In the chemical laboratory:

Professor—"What has become of Tom Appleton? Wasn't he studying with the class last year?"

"Ah, yes; Appleton—poor fellow! A fine student, but absent-minded in the use of chemicals, very. That discoloration on the ceiling—notice it?"

"Yes."

"That's him."

LUNAR INFLUENCES.—Observations of the part of a large number of scientists prove that the earthquakes are more frequent at the time of full moon and change of moon than at other times, and also more frequent when the moon is nearest the earth or when she is on the meridian. The cause to which this fact has been assigned is the action of those forces which produce the tides of the ocean; their similar influence upon the solid land strata leads to their disturbance in the shape of earthquakes.

DISAPPEARING COMETS.—Professor Daniel Kirkwood points out that seven of the twenty known comets of short period have disappeared, either by breaking into fragments, like Biel's comet, or by the transformation of the orbit by the influence of Jupiter, as in the case of Lexell's comet. He had already given reasons for thinking that two of the short period comets were asteroids drawn from their orbits by Jupiter's attraction, and he now advances evidence tending to show that the entire twenty were originally small planets.

A NEW FIBRE.—A French scientist has produced a new fibre. It is strong, and resists ordinary chemical agents and water. He dissolves gun cotton in equal parts of alcohol and ether, and adds to the solution either chloride of tin or iron in alcoholic solution. He finally adds alcoholic solution of tannin. The combination is forced through fine apertures into acidulated water, and takes form. The product is dried at a low temperature, and can then be wound on bobbins. The thread is dark colored, but any color can be given with dyestuffs.

LIGHTNING-FLASHES.—W. Kohlrausch has estimated the current and quantity of electricity in a lightning-flash. He calculates that it will take 9,200 amperes to melt a copper rod of 2.5 centimeters diameter. Such a current, concentrated in a flash, would contain from 52 to 270 coulombs, which would decompose from 5 to 25 milligrams of water, and form 9 to 45 cubic centimeters of explosive gas. If this energy were stored up, and distributed for electric-lightning, it would require from 7 to 35 flashes to keep one incandescent lamp lighted for a hour.

FRANKLIN'S BEQUESTS.—In 1890 will end the term of 100 years during which the cities of Boston and Philadelphia have each enjoyed the revenue from a bequest of $5,000 made by Benjamin Franklin. The money was to be loaned to young married artificers, and the trust has been executed, although the lapse of the century requires a new disposition of the funds. It is significant that while in Boston the $5,000 have grown to nearly $328,000, in Philadelphia the $5,000 have become only $70,000, and that in both cases the amount is less than Franklin estimated it would be.

A SPLENDID RECORD.—The Royal Botanic Garden of Calcutta has just completed the first century of its existence. It practically established the now flourishing tea industry of that country. The Directors were the first to grow potatoes in India, and they imported the cinchona tree from South America, and made India one of the great quinine producing countries of the world. From the West Indies they brought the best varieties of sugar cane, while systematic and successful experiments were made in the garden with flax, hemp, tobacco, india rubber, tapioca, cocoa, coffee, vanilla, ipecacuanna, and many other valuable products.

ODD MANUSCRIPTS.—To the student of old manuscripts there is nothing astonishing in the materials on which they were written. The "Koran" was inscribed on the shoulder blades of sheep; the "Iliad" and "Odyssey" of Homer, we are told, were first written upon serpents' intestines and in characters of gold. The scroll was 100 feet long. In Job's time it was the custom to write on lead, and the Northern authors wrote all of their works on beechwood or "bog," from which our word "book" is derived. Cleanthes, the philosopher, was so poor that he wrote his immortal work on shells, and there is to be seen at the Strozzi Palace, at Rome, a book made of marble, whose leaves are cut to a marvellous thinness.

VALUE OF FRESH MEAT.—The old saying that "beefsteak is better medicine than quinine" is receiving able support from many white men on the Congo. Stanley regarded Boma as a particularly unhealthful place, but it has lost a part of its bad reputation since cattle were introduced and European vegetables began to thrive in the gardens. The thirty white men at this settlement have not been called upon to attend the funeral of a European for a year. Their herd has multiplied until they are able to have fresh meat on their table every day, which they think is a great improvement on the tinned meats and canned vegetables upon which Stanley and his followers relied for strength to lay the foundations of the Congo enterprise.

READING FOR PROFIT.—"I am sorry to see you neglecting your business this way, Smith. They say that you don't spend half an hour a day at your office."

"Well, a fellow must look after his health, you know."

"Yes; but you don't look sick. What is the matter with you?"

"My wife takes the *Family Health Gazette*, and she makes out that I have a tendency to softening of the brain, with complicated symptoms of Bright's disease, liver complaint, dyspepsia, palpitation of the heart, inflammation of the bunions, cremation of the spleen, indignation of the œsophagus, hypertrophy of the palate, and besides, that I am not at all well. She insists that I must observe all the health rules in the *Gazette*, and you see I've no time for anything else.

COFFEE SWINDLES.

THE BUSINESS OF MAKING INFERIOR KINDS RESEMBLE SUPERIOR GOODS.

"The 'fixing,' or, as it is known to the trade, 'dressing' of coffee, has arrived at such a point that there are in this city alone two large concerns with expensive plants or machinery, whose sole business is to so manipulate the beans as to make them resemble anything but that growth or kind which they actually are."

Such was the statement made at a recent date, by a Fulton street wholesale coffee merchant. During the conversation which ensued on the subject the latter said: "For the most part the object of the 'dressers' is not to deceive the public at large, but rather the smaller jobbers and the retailers. Roughly speaking, coffee goes through four hands before it reaches the mills or mouth of the consumer. In the first place there is the importer, who sometimes owns the plantation on which the coffee he sells grows; then comes the broker, who acts as middleman between the importers and the jobbers, and lastly, there are the retailers, who purchase of the jobbers. The importers and brokers are necessarily experts in their business, and it is these who are responsible for the disguising and counterfeiting of various kinds of coffee. Spurious Java is perhaps more largely made than any other sort. Real Java, you know, comes in flattish coarsely woven mats. During the voyage from Java to this country the moist beans generate a kind of damp heat, the vapor from which permeates the thousands of mats packed in the ship's hold. The result is the bean in transit changes from its natural dull green tint to a light yellowish brown, and additionally it spreads and swells through the imbibed moisture. Now real Javas are the most expensive coffees in the market, and if a good imitation can be sold as the bona fide article the margin of profit is enormous. To effect this end Maracaibo—a Central American coffee—is taken, whose bean in the green state somewhat resembles the Java. It is then subjected to a sweating process equivalent to the heat of a long voyage. In twenty-four hours the Maracaibo will have taken on the characteristic hue of the genuine Java and, as far as appearance goes, can't be detected from the real article. It is then repacked in Java mats and foisted upon the unsuspecting buyer as Java pure and proper. In a case of this kind an additional four cents per pound profit is easily attained by the vendor of the spurious Java."

"How about Mocha coffee?"

"Mochas? Why there isn't a ton of real Mocha in the country. What are sold as Mochas are really the result of a neat bit of imposition in this case on the public at large. Coffee, as you know, grows in little pods, each pod containing two beans. Occasionally, however, the flower which produces the twin beans is imperfectly fructified, and in such cases only one bean grows in a pod. When this happens the solitary bean, instead of assuming the usual form, grows in a cylindrical shape. These berries are known in the trade as 'pea berries.' Now, true Mocha beans have a form much resembling 'pea berries.' Consequently centrifugal machinery is employed to separate the pea berry from the normal beans—for pea berry is found in every parcel of coffee—and when separated is sold as Mocha. Guatemalian coffees, too, are considered fair game for the dresser. The finer grades of these are very high priced and are generally in demand in certain portions of the country. Your dresser, therefore, takes a good Rio, which is probably three cents per pound cheaper than the Guatemala which it is desired to imitate, and places it in the polishing machine. A few hours' revolution of the steel boxes puts a brilliant gloss on the berries. But Guatemalas have a certain bluish tinge, while the Rios are of a dead green. And so soapstone and a dash of Prussian blue are thrown into the polisher, and behold, the Rio in a couple of hours is turned into an apparently choice Guatemala. Soapstone, by the way, is used to disguise the color of some of the lower grades of Rios, whose harsh green skins and blotchy appearance are the reverse of tempting to buyers. The powdery mineral puts a pretty creamy look on the face of the berry and improves it to the extent of two or three cents per pound. Another favorite dodge is to pack good Rios or low Costa Ricas into ordinary flour barrels, put fictitious marks upon them, store the barrels at some warehouse and then sell them as packages of West Indian coffees, West Indian always coming to this country in flour barrels, which in their turn have been sent down to the islands by the New York flour dealers. A good many of the Rio coffees are grown by small farmers and peasants. These beans are dried in the sun on the pampas, where for a good portion of the year cattle have been grazing and wandering. The beans, in the process of giving off their moisture, take up the characteristic odor of the manure-sodden ground and the result is the reverse of pleasant. I have had some of these coffees which when roasting threw out such a diabolical odor that it was impossible to stay in the roasting room. But your manipulator gets over this difficulty by subjecting the beans to a gentle and moist heat, the result being that the stuff is sold as coffee several grades higher in quality than it actually is. Occasionally a shrewd but unscrupulous dealer will 'do' the trade in a brilliant but hardly honest manner. A few years since an enormous consignment of apparently real Mocha was rushed on the market at very low figures. People were at a loss to tell from where it came or what it exactly was, but it went nevertheless. When some thousands of packages had been sold it was found that the stuff was the output of plantations in Liberia, cleverly cooked up by one of the Brooklyn dressers. Buyers were mad, but could do nothing in the matter. There is a certain plantation in Costa Rica which dries its coffee on cement floors. As a result, the berries—which are all of a choice kind—have the appearance of being clouded over with a film or mortary substance. The 'dresser' imitates these by mixing damp soapstone with fair Rios and violently shaking up the whole affair. A satisfactory Costa Rica is the result. Believe me that there is much more in the coffee trade than appears at the first blush."

QUININE PILLS.—The *National Druggist* says that the sale of one-grain quinine pills for twenty cents a hundred "cannot fail to be a losing business to every man that touches it;" and yet the drug is quoted in the same issue at half a dollar an ounce. There are 437½ grains in one ounce, and if a fair profit cannot be made at this price there is something wrong. Quinine has been classed as one of the necessaries of life and the public should have some advantage from its present low price.—*Sanitary News.*

CURIOUS PHOSPHORUS.—Mr. Herman recently brought before the Society of Chemical Industry some exceedingly curious specimens of phosphorus crystallized by sublimation in closed tubes from which the air has been extracted. The forms of the crystals belong to the cubic system, like those of the diamond, and they are, like the latter formed of a very large number of facettes. Their action upon light is also similar to that exerted by the diamond, so that the crystals of phosphorus, small as they are, give out all the colors of the spectrum with great brilliancy. They are, in fact, like miniature diamonds. When exposed to the light they become covered with an opaque red coating.

SOMETHING ABOUT CREOLIN.—Creolin the new antiseptic, is a product of the dry distillation of certain kinds of English coal. It occurs as a dark brown, sirupy fluid, having a strong tarry odor. It mixes in all proportions with water, oil and glycerine, and is soluble in alcohol. The watery mixtures have at first a milk-white color, but on standing, a finely flocculent precipitate separates and the mixture assumes a brown color. Creolin is a "secret" preparation, and is, moreover, a mixture, and not a definite chemical compound, and Liebreich has very properly called attention to the fact that under the circumstances the makers can alter its composition as they see fit. However, Fischer's investigations (*Phar. Zeitung*, 1887, 103) go to prove that at present creolin has a pretty constant composition.

CLEANLINESS, EXTERNAL AND INTERNAL.

The race has learned the hygienic value of keeping the outside of the human body in a condition of perfect cleanliness, but it is still far from realizing that the same law applies, in this respect, to the interior as well as to the exterior of the physical organization. Yet the analogy is so complete that it seems strange that a person can overlook the fact in any of its details. The process of getting dirty upon the outside of the body is not so simple as at first sight would appear. The atmosphere deposits dust upon the skin as upon every other object. Nearly every object with which a person comes into contact or even approaches parts with a small amount of its substance, of which more or less adheres to his frame and raiment. Such hard substances as coal, granite and iron behave similarly, though to a very slight extent, as sand, clay and flour. Even liquids exert the same action, as any one knows who has walked through a sugar refinery, distillery or wine cellar. The pores excrete water containing salt, ammonia, and other bodies, while from the minute glands of the skin there exudes a constant flow of oil. To all of these must be added the slow death and drying-up of the outer, or dead skin. A certain portion of the daily life of each individual is spent in removing this complicated mixture of substances, which we sum up under the one term—dirt. Soap, ammonia, borax, and soda bicarbonate, hot water, Russian and Turkish baths, massauge, sudorifics and inunctions are but aids in performing this task. It is similar in respect to the interior of the body. But to the extent that this is more complex and varying than the exterior, is the complexity of its dirt greater than that of the latter. Thus into the respiratory organs are carried all the dust and germs with which the atmosphere is laden; into the assimilative system are borne the dirt, foreign matter, impurities and poisons which obtain in all foods, and especially in all drinking waters. The old saw of everybody eating a peck of dirt understates the fact. From birth to death we are eating and drinking dirt. Beyond these sources are others. Every organ and process, in fact every substance in the physical frame decays with more or less rapidity, and is forever rebuilt and made good by the blood. The bodies and compounds formed by disease or by improper modes of life undergo the same decomposition. The blood itself wears out and becomes dead matter. The surface of the body, lungs, and indeed of nearly all the great organs, possess an absorbing power which is well displayed in such diseases as painters' colic, from the mere handling of lead compounds, of necrosis of the bones, from the absorbing of phosphorous fumes, and of mercurial ulcers, from working in quicksilver mines. This absorbing power of living matter is what constitutes the danger from malaria, sewer gas, destructive vapors and similar material influences, and also underlies such disorders as pyemia, uremia and cellulites. The same law which induces men to wash their hands should induce them to clean the interior of the body. If the former is not done, the skin becomes hard, horny and hideous. If the latter is not done, far more serious results are bound to occur. Nature endeavors to expel the dirt, first by the regular excreting organs, then by the blood and pores, and, when these fail, by the last resort—disease. It is, however, very easy to aid nature in this respect, and so keep the body as clean within as without. The only requisite is some thorough and scientific blood purifier which will increase the activity of the vital processes and expel or destroy all the humors of the human system. Thanks to modern medicine, this is accomplished by using Ayer's Sarsaparilla, the most reliable blood purifier known to the learned professions. It neutralizes the evil influence of the foreign bodies which have been taken into the system by absorption or otherwise, and destroys the impurities which exist in the blood and tissues of the frame. So great is its efficiency that, in the shortest period, it cleanses every part of the system and restores the entire organization to health and vitality.

BUSINESS NOTES.

(From the Boston Medical and Surgical Journal, Sept. 27.)

REED & CARNRICK'S SOLUBLE FOOD.

In the *Journal* of August 2, 1888, was published an analysis of Carnrick's Soluble Food, copied from, and credited to, the Report of the New Jersey Dairy Commissioner. Dr. Newton, the Commissioner, has forwarded to us a circular, recently issued, bearing upon the same subject, to which it is necessary we should, in common honesty, give equal publicity to that given the first quotation. The circular is as follows:

State of New Jersey,
Office of the Dairy Commissioner,
Paterson, N. J., *Sept.* 19, 1888.

In the report of this department to the Legislature for the year 1887, an article by Prof. A. R. Leeds entitled "Foods for Infants and Invalids," was published.

Messrs. Reed & Carnrick have, in a communication to this office, taken exception to some of the statements therein made, claiming that the amount and character of the ingredients of their food preparations were misrepresented. In order that these gentlemen might receive full justice, I offered to have the analytical work revised by a chemist of reputation, who had never had any business or professional relations with either the State or Reed & Carnrick; and it was also stated that the result of this series of analyses would be published by this office. Accordingly, Prof. Elwyn Waller, Professor of Analytical Chemistry at the School of Mines, Columbia College, New York, was requested to purchase a package of "Carnrick's Soluble Food" in the open market, analyze the contents thereof, and report the results to me. Below is a copy of his report:

"I examined a sample of 'Carnrick's Soluble Food,' (purchased by myself from Eimer & Amend). I find that 38.26 per cent. of the albuminoids which it contains are in the soluble form. The sample also gave readily, the biuret reaction for peptones. I failed to detect in the food, when moistened, any of the 'hard, unchanged particles of casein' which it has been asserted that it contains. My results lead to the conclusion that the casein in the preparation has been partially rendered soluble by the action of the digestive ferment as claimed by the manufacturers."

(Signed),
Elwyn Waller, Ph.D.

I append herewith a letter on this subject that I have received from Prof. A. A. Breneman, S. B., formerly Professor of Chemistry at Cornell University, now analytical chemist at 97 Water Street, New York.

Wm. K. Newton,
Commissioner.

New York, *September* 18, 1888.

Dr. W. K. Newton, *State Dairy Commissioner, of New Jersey.*

Dear Sir: The report of your department for the year 1887, refers to certain preparations made by Reed & Carnrick, of New York, in a way which, from my knowledge of their work, seems to do them injustice.

The statements to which I especially refer are:

(1) That the milk solids in the preparation known as Carnrick's Soluble Food contains merely the dried casein of the original milk, neither changed nor modified by any process of digestion.

(2) That the analysis of this food given in the Report of the State Board of Health, of New Jersey, for the year 1885, correctly represents it, giving, as it does, only 10.25 per cent. of total albuminoids.

(3) In the analysis of the preparation known as Liquid Peptonoids (New Jersey State Dairy Report, 1887) the proportions of alcohol and albuminoids there given are made the basis of comments which are extravagant in language, and unnecessarily severe.

On February 20, 1888, I made, at the request of Reed & Carnrick, a test of the peptonized milk received in good condition from their factory. Of the albuminoids of the original milk 46.6 per cent. were found to be rendered soluble (that is, no longer precipitable by boiling or by acids). Through the process of digestion such soluble nitrogenous matters must, under the circumstances, consist of peptones, albumoses and caseoses, products of the modification of the original albuminoids of the milk by digestion.

Having made many analyses of this food during the past three years, I have never found the proportion of albuminoids to run below 16.5 per cent. as determined by combustion with soda lime. The average of fifteen analyses, made since January 1, 1887, shows 18.96 per cent. of albuminoids. These results also agree well with the analyses of the same food made by Stutzer and other well-known chemists.

As to the liquid peptonoids, the proportion of albuminoids is limited only by the quantity which can be kept unchanged in solution. Sixteen per cent. of alcohol is necessary to prevent decomposition of the albuminoids, and no quantity greater than three per cent. of these can be held in solution in this liquid. Many attempts have been made to accomplish a better result, but in all cases the excess of albuminoids was deposited after a time, or (with reduced proportion of alcohol) decomposition of the albuminoids occurred.

Very respectfully,
A. A. Breneman,
Analytical and Consulting Chemist.

HORSFORD'S ACID PHOSPHATE

In Headache and Mental Exhaustion.

Dr. N. S. Read, Chandlersville, Ill., says: "I think it a remedy of the highest value in mental and nervous exhaustion, attended with sick headache, dyspepsia, diminished vitality, etc."

KEITH'S AVENA SATIVA.

In a previous number a typographical error made us say that Dr. Keith introduced his *Conc. Tinc. Avena Sativa* in 1884. This should have been 1881, thus antedating Kane's Scotch Essence over a year.

LOOK OUT for Imitations and Substitutes OF Horsford's ACID PHOSPHATE.

A variety of imitations and substitutes of this standard preparation have appeared under the name "Acid Phosphate," or a similar title, all of which differ materially from the genuine article.

Be sure the name **"HORSFORD'S"** is on the label. No other genuine.

N. D. ARNOLD, Treas.

Providence, R. I. Rumford Chemical Works.

CALIFORNIA
Fine Table Wines
From our Celebrated Orleans Vineyard.
Arpad Haraszthy & Co
Producers of the
ECLIPSE
CHAMPAGNE,
530 Washington St.
SAN FRANCISCO.
PARK & TILFORD. New York, } Agents.
C. JEVNE & CO., - - Chicago, }

A GOOD INCOME.

We have enabled several gentlemen and ladies to add largely to their incomes by paying them liberal commissions on subscriptions, for this and other journals.

For further particulars address

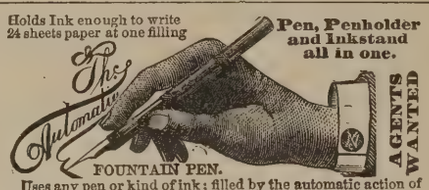
AMERICAN ANALYST,
19 Park Place, New York.

HORTON, CATO & CO.'S


"ROYAL" SALAD DRESSING.
The best prepared Dressing, always fresh, does not turn oily, rancid or decompose as other dressings of a similar nature.

"ROYAL" WORCESTERSHIRE SAUCE,
The Peer of American Product.

HORTON, CATO & CO.,
SOLE PROPRIETORS AND MANUFACTURERS,
DETROIT, MICH.

Holds Ink enough to write 24 sheets paper at one filling
Pen, Penholder and Inkstand all in one.


FOUNTAIN PEN.
Uses any pen or kind of ink; filled by the automatic action of India-rubber reservoirs; feeds itself by the pressure of writing; carries in the pocket safely; will not leak; finely made and finished in nickel-plate; superior to a $2 Stylographic pen; sells with a rush. Samples, postpaid, 25 cents. Address,
G. H. W. BATES & CO., 125 MILK ST., BOSTON, MASS.


BLAIR'S PILLS
Great English Remedy for Gout, Rheumatism and Kidney Complaints.
Sure, Prompt and Effective. Oval box 34, round box 14 pills.
At all druggists, and 224 William St., New York.

KEITH'S
CON. TINC. AVENA SATIVA
(From Common Oats.)
Without Admixture of any Kind.

A Powerful Nerve Stimulant, Tonic, Etc.

Was first offered to the medical profession by B. Keith & Co., in 1881, as a remedy to be employed in the treatment of

Paralysis, Epilepsy, St. Vitus' Dance, the Morphia or Opium Habit, Chloral and Tobacco Habits, Sleeplessness, Nervous Debility and Exhaustion, Neuralgia, Alcoholism Painful and Deficient Menstruation, Headache, Hysteria, Impotency, Convulsions and Prostration from fainting, and in the Convalescent stage of all Acute Diseases.

Dose.—From ten to thirty drops, or more, as often as may be indicated to meet the urgency of the case. Administer in hot water when quick action is desired.

An Overdose Causes Pain at Base of Brain.

——We make one quality only.——

Price,
2 oz., 45c.; 4 oz., 75c.; 8 oz., $1.35; 16 oz., $2.50

B. KEITH & CO.,
75 William Street, N. Y.

ON THE USE OF PURGATIVES.

BY CHARLES A. HOFF, M. D., ST. LOUIS, MO.

Of all preparations contained within the *pharmacopœia,* there are none, apparently, held in higher esteem by mankind than that class of medicines, commonly known as purgatives. The busy practitioner confidently prescribes them with variable frequency, singly and combined, from the date of the writing of his very first prescription to that of his last; and the corner druggist rarely sees a day pass over his head on which he does not greet the customer who has called around to get "something to act upon his bowels." Indeed, the inevitable purgative awaits the tiny baby screaming in its first attack of colic; it is resorted to by the invalid weighted down with years of suffering and disease; and it is by no means despised by the individual in robust health, when assailed by the various petty ills, which even the most vigorous seldom entirely escape.

Notwithstanding the fact that purgatives are so generally prescribed by the physician, and so frequently resorted to without advice by the patient, they are not altogether incapable of doing harm. As everybody knows, the habit of purging the system repeatedly with salines, cholagogues, hydragogues, or drastics, is a most pernicious one; and the physician who fails to exercise a proper care, both in the selection and the administration of cathartics will sooner or later bankrupt the health of his patients as well as his own hard earned reputation.

Constipation is a complication of so many disorders, a symptom of so many diseases that its treatment in different cases depends upon very different considerations. For a simple, ordinary attack, the average doctor has been accustomed to use a simple purge, such as castor oil, sulphate of magnesia, rhubarb, senna, aloes, colocynth, blue pills, etc.; yet in none of these, can it be truly said, has there been found all that could be wished for, even in so simple a matter as a laxative. Where can we find the physician who has not been vexed and annoyed at the complaints of his patients against the purgative medicines he has been accustomed to prescribe. Some people there are who can not or will not swallow pills; many object to the nauseating castor oil; not a few oppose the use of salines since they are disagreeable both in taste and effect; many look upon all resinous cathartics as objectionable on account of their so called heating properties; aloes is objected to in pills and especially in pregnancy; elaterium is said to be excessively harsh and severe, croton oil is known to be dangerous; podophyllin causes an undue amount of griping; blue mass is avoided on general principles; and so on to the end of the chapter.

Fortunately, however, the physician of the present need no longer be placed in a dilemma when called upon to prescribe a preparation free from the faults enumerated in connection with ordinary purgatives. The pharmacist has bravely come to his aid with a formula of incomparable excellence; and this preparation, a combination of "manna, purified cathartic acid and fruit juice," although but recently brought to the notice of the medical world, is, nevertheless, already regarded as a most valuable addition to the resources of medicine.

The happy thought that suggested the combination known as the Rio Chemical Co.'s Acid Mannate justly challenges unlimited admiration and esteem, and has thus far evoked from the profession an almost universal verdict of commendation and praise. Prompt, mild and certain in its action, Acid Mannate may well be considered an ideal remedy in the constipation of pregnancy. Being pleasant to the taste, and continuing its good work without increased dosage, it is pre-eminently adapted to cases of habitual constipation. Indeed, in its wide range of adaptability as an aperient medicine it is impossible to exaggerate its importance, or allude either directly or indirectly to the vast variety of its beneficial, therapeutical properties.

The importance of laxatives is probably nowhere appreciated so much as in the constipation of pregnancy; and it is to this fact, no doubt, more than to any other, that Acid Mannate owes its great popularity and fame among remedial agents. The testimony of thousands of honorable medical gentlemen leading us to believe that, through the beneficent effect of this same elegant formula, constipation need not hereafter, as in the past, be regarded as one of the most troublesome attendants upon gestation. Moreover, the atrocious female pill of unknown composition but of dire effect, which has deluged the drug market for ages, we may consider as having had its day; and it is to be hoped that, since the physician is now in possession of a purgative especially suited to the period of gestation, female life will be less frequently harassed by the ails and aches said to be peculiar to the sex; and that miscarriages, displacements, granular erosions, congestions, headaches, dyspeptic and hypochondriacal attacks, and the whole long train of aches, pains and nervous ills will grow less familiar to the medical profession in the same ratio that the physician increases his familiarity with the actions of Acid Mannate.

A full sized bottle of Acid Mannate will be sent free to any Physician who desires to test it, if he will pay the express charges and mention this Journal, on application to the

Rio Chemical Co.,
St. Louis, Mo

J. HENRY HENTZ. J. P. ROBINETT. J. HENRY HENTZ, Jr.

ESTABLISHED 1793.

WHITE, HENTZ & CO.,

SOLE PROPRIETORS OF

Trimble and Pennsylvania Monogram Whiskies.

222 and 224 NORTH SECOND ST., PHILADELPHIA.

D. LIEBER, 17 South William St., New York. Col. H. A. SELIGSON, 1200 Pennsylvania Ave., Washington, D. C.

NATRONA BI-CARBONATE OF SODA.

(ABSOLUTELY PURE.)



The nature of the raw material from which NATRONA BI-CARBONATE OF SODA is made—viz., kryolith, a mineral containing *pure sodium*—insures a purity and uniformity of product which cannot be obtained from any other known material. In making BI-CARB. SODA from any other raw material, the use of sulphuric acid is a necessity, but none is used in any part of the process of making NATRONA BI-CARB.; hence its entire freedom from the slightest trace of arsenic, which is always present in ordinary soda. Its absolute purity and entire freedom from all traces of *sulphate of soda*, common salt and other impurities, render NATRONA BI-CARB. NEARLY TASTELESS, and being bolted through the finest bolting-cloth, insures the finest stage of division.

To these indisputable facts the attention of CONSUMERS of soda is specially called. They are IMPORTANT, and should influence both those who use and those who sell soda, to buy and sell NONE BUT THE BEST.

The NATRONA BI-CARB. Soda is kept in stock by almost every wholesale druggist and grocer throughout the United States, of whom it may be ordered.

Natrona Bi-Carb. Soda is unequaled by any other brand of English or American Manufacture.

PENNA. SALT MANUFACTURING CO.,

NATRONA CHEMICAL WORKS. PHILADELPHIA, PA.

ALTHENE SKIN SOAP

An absolutely pure and perfect soap for all purposes of the toilet, nursery, bath or sick-room. Has the approval of leading chemists and physicians, and is recommended by all who have used it. Price 25 cts. a cake, or 65 cts. for a box of three. Can be obtained of the retail druggists or from

J. W. CAMPION & CO., 916 Filbert Street,

PHILADELPHIA.

THE

VIBURNUM COMPOUND

OF

DR. HAYDEN,

THE STANDARD IN

FEMALE DISORDERS.

Employed in the leading Hospitals, and prescribed daily by the most eminent Gynæcologists. ***Five Thousand Physicians*** have given their testimonials for ***HAYDEN'S VIBURNUM COMPOUND.***

DISPENSED BY ALL APOTHECARIES.

GOOD AGENTS wanted to solicit subscriptions for the AMERICAN ANALYST. Apply 19 Park Place, N. Y.

Thousands of Babies

bear testimony to the use of

RIDGE'S FOOD?

One mother said, "I have reared five babies on it, and they all thrived." No other food has this record.

ANALYZE "MONON" Resolutions!!

Whereas, The Monon Route wishes to make known to the world that it has the finest system of Pullman Buffet Sleepers and Chair Cars, running between Chicago and Louisville, or Chicago, Indianapolis and Cincinnati;

And Whereas, This makes it in fact the double connecting link of Pullman travel between the winter cities of Florida and the northern summer cities; then

BE IT RESOLVED, That, before starting on a trip, be sure and address E. O. McCormick, Gen'l Pass. Agent, 185 Dearborn Street., Chicago, for rates, etc.



MALTED MILK

THE ONLY FOOD

For Infants and Invalids

THAT CONTAINS ALL THE ELEMENTS OF NUTRITION, WITHOUT A SINGLE ADDITION.

MALTED MILK does not have to be cooked.

MALTED MILK needs no addition of milk, only to be stirred up with water, which can be done without the slightest fuss or trouble.

MALTED MILK will not spoil in hot weather.

MALTED MILK is always ready for immediate use night or day, when traveling or at home.

MALTED MILK does away with the danger of using sour or impure milk.

MALTED MILK is free from starch and cane sugar. All foods that have to be cooked contain starch.

Ask your physician his opinion of **MALTED MILK**, he knows all about it.

Price, . . . 50 Cts. | Large Size, . $1.00

Extra Large Glass Jars for hospital and family use, ... $3.75

These contain five times the quantity of the $1.00 bottles.

A sample bottle will be sent free to any Mother or Invalid sending their address to

MALTED MILK CO.

RACINE, WISCONSIN, U. S. A.

YELLOWSTONE NATIONAL PARK, PACIFIC COAST AND ALASKA.

The Yellowstone Park is unquestionably attracting more attention at the present time, as a tourist resort, than any other place on the face of the earth. This spot is reached by rail only by the Northern Pacific Railroad, the famous dining-car line to the Pacific Coast, the only one of the transcontinental lines running dining cars of any description whatever. A book ticket will be sold at the Eastern terminals of the Northern Pacific for $110, including rail and stage transportation, meals on dining cars, Pullman and five day's accommodations south of Livingston in the Park.

The Alaska tour is also one that is attracting wide attention. The rates and facilities offered for making this trip are better via the Northern Pacific Railroad than by any other line. The attractions offered *en route* via the Northern Pacific, such as the ride through the Lake Park region of Minnesota, by the great wheat fields of Dakota, along the Yellowstone River and Clark's Fork of the Columbia, through the famous Spokane Falls region, over the Cascade Range, by the Palisades of the Columbia, Puget Sound, etc., together with the superior accommodations offered, make a trip by this route especially enjoyable. By writing Charles S. Fee, General Passenger Agent, M. P. R. R., St. Paul, Minn., you will receive copy of "Wonderland" and other books descriptive of the Yellowstone Park, Alaska and the country in general traversed by the "Dining Car and Yellowstone Park route."

YOU CANNOT OBTAIN THESE GOODS



Excepting by being measured at one of our stores or sending your order by mail. The **reputation** of these justly celebrated goods is now so widely known in every State in the Union that we have only to keep plainly in the public view, directions how to obtain the

FAMOUS CUSTOM-MADE PLYMOUTH ROCK $3 PANTS.

Suits cut to order $13.25.

Overcoats cut to order $12.00.

1. "Only a postal card" sent to our Boston store, **provided you MENTION THIS PAPER,** brings by return mail **20** samples cloth to select from, self-measurement blanks and a linen tape measure. 2. But *if you have not time* to wait for samples, tell us about the color preferred, with **waist, inside leg** and **hip** measures, remit $3, together with 35 cts. to cover cost of expressage or postage, and we will forward the goods prepaid to any address in the U. S., guaranteeing safe delivery and entire satisfaction or money refunded.

ONLY A POSTAL CARD

Remember that for any cause we refund money at buyer's request upon return of goods, or make alterations on new garments **free of extra charge.**

Address all mail to **Boston Store.**

PLYMOUTH ROCK PANTS CO.,
18 Summer Street, Boston, Mass.;
285 Broadway, New York;
Burnside Building, Worcester, Mass.

A letter from the American Express Co. (capital $20,000,000) about our standing and business methods may be obtained by writing to them at Boston.



FACIAL BLEMISHES.

The Largest Establishment in the World for their Treatment. Facial Development, Hair and Scalp, Superfluous Hair, Birth Marks, Moles, Warts, Moth, Freckles, Wrinkles, Red Nose, Acne, Pimples, Black Heads, Scars, Pitting, etc., and their treatment. Send 10 cts. for book of 128 pages, treating on 25 skin imperfections, 6th edition revised and illustrated.

Dr. JOHN H. WOODBURY,
210 West 42d St., New York City, N.Y.

Inventor of Facial Appliances, Springs, etc. Six Parlors; three for Ladies. Established 1870.

ESTABLISHED 1823.

ALEX. YOUNG CO., Limited,

DISTILLERS OF

Y. P. M. WHISKIES.

DISTILLERY, - - - Nos. 408, 410, 412 and 414 South Street.
MALT HOUSE, - Nos. 416, 418, 420, 422 and 424 South Street.
STORE, - - - - - - - - - - No. 700 Passyunk Avenue.

PHILADELPHIA, PA.

New York Office, - 78 Wall Street.

FOR SALE BY

PARK & TILFORD, and ACKER, MERRALL & CONDIT.

LEA & PERRINS' SAUCE.

Lea & Perrins', the original and genuine Worcestershire Sauce, has been before the public over a half a century. Like all popular favorites it has long been the standard of comparison and the pattern for counterfeiters who not being able to imitate its excellence offer to the public imitations in bottling, labels and style of putting up. They dare not counterfeit the signature of Lea & Perrins which is on the red label of every genuine bottle, and of which this is a facsimile.

Lea & Perrins

To be sure of obtaining the genuine article, see that the above signature is on the label.

A SET BACK TO ALL PREVIOUS INVENTION.

EDUCATION Quick vs. Old System **Dead.** Education almost by machine process. As mind is above matter so is this method (simply by seven words) above all previous invention of whatever kind. **A Wherewithal Book, $1.00 Form.**

We **guarantee** you will be more than **satisfied.**

If you want this method remit $1.00 by Registered Letter or send Check and receive by mail a great **possibility** from the sole originators and proprietors of the **New Education,**

WHEREWITHAL COMPANY Philadelphia, Pa.

Ask Grocers for our Patent Barley **CRYSTALS,** a new, unrivalled **Cereal Food,** for Breakfast Tea & Dessert. If not sold there, write us for free samples. **GLUTEN FLOUR** and **SPECIAL DIABETIC FOOD** are invaluable waste-repairing flours for **Dyspepsia, Diabetes, Debility & Children's Food.** No bran; mainly free from starch. For all family uses nothing equals our **HEALTH FLOUR.** Send for circular offering 4-lbs. free.

FARWELL & RHINES, Props., Watertown, N.Y.

FOR THE ILL-EFFECTS

— OF —

Summer Heat, Heat Exhaustion.

Where after a prolonged exposure to a heated atmosphere you feel exhausted, depressed and tired mentally as well as physically, take a dessert spoonful of Bromo-Soda in half a glass of water, and drink while effervescing, when relief will be sure to follow.



A Cure for Sick Headache, Sleeplessness, Etc.

ASK FOR BROMO-SODA and TAKE NO SUBSTITUTE.

THE TORSION

Braided Wire Mattress.

At all times a thoroughly ventilated and perfectly clean mattress, it cannot absorb odors, or retain exhalations or disease germs.

D. HAYES AGNEW, M. D., Prof. of Surgery, University of Pennsylvania, says:

"The Torsion Braided Wire Pillow and Mattress I regard as superior to anything of the kind now in use; well suited for either private or hospital use.

Prof. WM. H. PANCOAST, late Professor of Anatomy, etc., in Jefferson Medical College, now Professor of Anatomy and Clinical Surgery in the Medico-Chirurgical College of Philadelphia Hospital Surgeons, says:

"I have used in my surgical practice your Braided Wire, in the form of mattresses, pillows for the head and body, and short pillows for the arm and leg when injured. I find them most admirable, cool and light, yet affording perfect and elastic support.
I have saved a patient from bed sores by the use of the Braided Wire mattress."

WM. H. FORD, President Board of Health, Philadelphia, says:

"I have used the Torsion Braided Wire Mattress with great satisfaction, it is light and therefore easily handled; it is elastic and very comfortable. The case can be easily removed to afford a complete airing, a feature of great importance from a health point of view.
It is an invention of great usefulness.

For descriptive circular and price list, send to

The Torsion Braided Wire Upholstering Company,

1017 CHESTNUT ST., PHILA.

"BILLET"

are

Carefully Selected

French Sardines,

Packed in Choicest Olive Oil.

AT ALL LEADING GROCERS.

Any Retail Druggist in the United States who desires to obtain Advertising Matter, Show Cards, Signs, etc., which will assist and instruct him in the sale of Harriet Hubbard Ayer's Recamier Toilet Preparations and Vita Nuova, should address THE RECAMIER MFG. CO., 52 and 54 Park Place, New York City.

UNEQUALLED Ask your Grocer for, and insist on having, LEA & PERRINS' Sauce, "The Worcestershire." It is known throughout the whole civilized world as the Best and most Delicious Sauce. **DELICIOUS**

SCOTCH MARMALADE, Jams, Fruit and Wine, Jellies, &c.
By James Keiller & Son, Dundee.

SCOTCH BISCUITS, Albert, Water, and Oat Cake,
By Robert Middlemass & Son, Edinburgh.

RACAHOUT des Arabes, by De Langrenier, Paris.

BAY WATER, West India, (J. D. S. brand), in cases, one dozen bottles.
Sold by all first-class Grocers.

JOHN DUNCANS' SONS, 43 Park Place, New York. Agents for the United States.

Robert Gordon's
TRADE MARK.

SPICED · SEA · FOODS
(IN GLASS.)

OYSTERS, LITTLE NECK CLAMS, MUSSELL, SHRIMP, LOBSTER, Etc.,

Packed in 8 and 16 oz. Jars. Guaranteed to be strictly Pure.

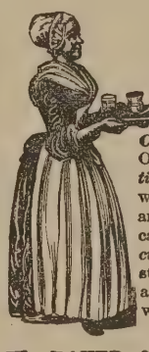
MADE OF THE FINEST MATERIALS.

—ALSO,—

ROBERT GORDON'S CONDENSED CLAM CHOWDER,
In 3-lb Cans. Cheapest and Best in the Market.

MANUFACTURED BY

JONES, GORDON COMPANY, Limited,
204 West Street, New York.



GOLD MEDAL, PARIS, 18—
BAKER'S
Breakfast Cocoa.

Warranted *absolutely pure Cocoa,* from which the excess of Oil has been removed. It has *three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup.* It is delicious, nourishing, strengthening, easily digested, and admirably adapted for invalids as well as for persons in health.

Sold by Grocers everywhere.

W. BAKER & CO., Dorchester, Mass.

Sura Cura

ROBINSON'S SURE CURE FOR
RHEUMATISM
And NEURALGIA,

And remedy for diseases arising from an impure state of the blood. An antidote for MALARIA. Price 50 c. and $1. Sent by mail on receipt of price. Send for Circular.

R. W. ROBINSON & SON,
184 Greenwich Street,
NEW YORK.

Sura Cura

RIDGE'S FOOD

is the most reliable substitute known for mother's milk. Its superiority rests on the test of 30 years use in Great Britain and the U. S. A sustaining, strengthening diet for Invalids; nutritious, easily digested, and acceptable to the most delicate stomach. Four sizes, 35c. up. Pamphlet, "Healthful Hints," sent free. WOOLRICH & CO., Palmer, Mass.

All Postmasters will receive subscriptions for the **AMERICAN ANALYST.**

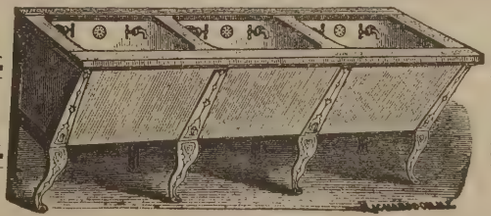
GOLD You can live at home and make more money at work for us than at anything else in the world. Either sex; all ages. Costly outfit FREE. Terms FREE. Address, TRUE & Co., Augusta, Maine.

STEWART CERAMIC CO.,
312 PEARL ST., Cor. Peck Slip, NEW YORK.
Sole Manufacturers under Morahan's Patents of

SOLID WHITE CROCKERY STATIONARY WASH TUBS

Warranted by us for thirty years against injury (violence excepted).

CANNOT LEAK.



VERY STRONG.

This cut shows three Tubs set up with galvanized iron stands and heavy ash frame firmly secured on top.

SMOOTH GLAZED SURFACES. ALWAYS CLEAN.

The only solid white crockery Washtub ever made in the world. Do not buy imitations until you see the genuine "Morahan's Patent," stamped on every tub. Washboard and Soapcup moulded in every set.

SOLID WHITE CROCKERY SINKS
Made of same material as the Tubs and fully as strong.

Send for Illustrations and Price Lists. **Send for Illustrations and Price Lists.**

PEACOCK'S BROMIDES

(SYR: BROM: COMP: PEACOCK)

NERVE SEDATIVE.

Each fluid drachm represents 15 grains of the Combined C. P. Bromides of Potassium, Sodium, Calcium, Ammonium and Lithium.

USES:—EPILEPSY, and all CONGESTIVE, CONVULSIVE, and REFLEX NEUROSES.

This preparation has stood the test of time and experience, and can be relied upon to produce results, which can not be obtained from the use of commercial bromide substitutes.

DOSE:—One to two FLUID drachms, in WATER, three or more times a day.

PEACOCK CHEMICAL CO., St. Louis.



These Goods are "Par Excellence,"

Pure, Healthful and Reliable, warranted to give satisfaction in every particular. For sale by wholesale and retail grocers throughout the United States. VOUWIE BROS., Manufacturers, CLEVELAND and CHICAGO.

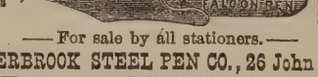
OPIUM AND LIQUOR HABIT CURED.

WE solicit an investigation of our system and methods, and will gladly send to any one very interesting matter on the OPIUM HABIT DRUNKENNESS and their effects and cure. Physicians specially invited to examine, and if desirous of trying our remedies, liberal arrangements will be made with them.

THE LESLIE E. KEELEY CO., Dwight, Illinois.

ESTERBROOK'S STEEL PENS

Leading Numbers 14,048,128 130, 135, 333, 161.



—For sale by all stationers.—

THE ESTERBROOK STEEL PEN CO., 26 John St., N. Y.
WORKS CAMDEN, N. J.

THE FINEST MADE
COLBURN'S
PHILADELPHIA
MUSTARD
KING OF CONDIMENTS

ESTABLISHED 1857.

J. H. CUTTER,

OLD

BOURBON AND RYE WHISKIES.

We are the Sole Owners and Proprietors of this Celebrated Brand of Whiskey.

C.P.MOORMAN & CO. **LOUISVILLE, KY.**

We Guarantee the Superior Quality and Absolute Purity of every Barrel of Whiskey sold by us under this Brand.

PHYSICIANS'
Club Rates on Valuable Journals.

The American Analyst.

A Semi-monthly Review, devoted to Industrial Progress, Sanitation, the Chemistry of Commercial Products, and the Suppression of Adulteration. This journal contains just the information, the possession of which is valuable to the practitioner in his intercourse with patients. $1.00 per year.

The American Medical Digest.

A Monthly Epitome of the best, most practical and useful Papers contained in the Medical Publications of the world. A current record of the Monthly Progress of Medical Science. $2.00 per year.

We will send these two together to any address for $2.00 per year.

We also receive Subscriptions for the following Medical Journals. In each case the publishers' price is given and the price for which we will send that particular Journal with the ANALYST and the DIGEST:

	PUBLISHER'S PRICE.	WITH DIGEST AND ANALYST.
Albany Medical Annals	$1 00	$2 75
Ann Arbor Med. Counsel'r (Hom.)	2 00	3 75
Ann Arbor Phys'n and Surgeon	2 00	3 75
Atlanta Med. and Surg. Journal (Only new subscribers taken.)	2 50	4 00
Austin (Tex.), Daniel's Med. Journal	2 00	3 75
Boston Annals of Gynæcology	2 00	3 50
Boston Journal of Health	1 00	2 75
Boston Med. and Surg. Journal (Outside of New England only.)	5 00	6 00
Chicago, Jour. of Am. Med. Association	5 00	6 00
Chicago Medical Jour. and Ex	3 00	4 50
Chicago Medical Times	2 00	3 75
Chicago, Western Med. Reporter	1 00	3 00
Cincinnati Med. and Dental Journal	1 00	3 00
Dallas (Tex.), Courier Rec. of Med	2 00	3 75
Detroit, American Lancet, Mo	2 00	3 75
Detroit, Index Medicus (A Monthly Classified Record of Med'l Liter.)	10 00	10 00
Detroit, Leonard's Ill. Med. Monthly	50	2 35
Detroit, Medical Age (Semi-Monthly)	1 00	2 75
Gilsum (N. H.), Quarterly Review of Narcotic Inebriety	1 00	2 75
Indianapolis (Ind.), Ecl. Med. Journal	1 00	2 75
Indianapolis Medical Journal (Outside of Indiana only.)	1 00	2 75
Kansas City, Western Med. Jour	2 00	3 75
Louisville, Medical Investigator	50	2 35
Nashville, Jour. of Med. and Surg	2 00	3 75
New Orleans, Med. and Surg. Journal	3 00	4 75
New York, Sanitary Era	1 00	2 75
Braithwaite's Retrospect	2 50	3 50
The Epitome	2 50	3 50
New York Medizinische Presse (The only *German* Medical Journal in U. S.)	2 50	3 75
Philadelphia Hahnemannean (Monthly) (New Subscribers only.)	3 00	4 25
Phila. Med. and Surg. Reporter	5 00	6 50
Philadelphia Medical Summary	1 00	2 85
Philadelphia Medical Register	2 00	3 50
Phila. Archives of Pediatrics (The only Journal devoted to Infants' Diseases.)	3 00	4 50
Philadelphia Medical World	1 00	2 85
Philadelphia Medical Times	2 00	3 75
Sacramento Medical Times	2 50	4 00
San Francisco Pacific Med. and Surgical Journal	3 00	4 50
St. Louis Medical Brief	1 00	2 90
St. Louis American Med. Journal	2 00	3 25
St. Louis Med. and Surg. Journal	2 00	3 25
Toronto, Canadian Practitioner	3 00	4 50

More Journals will be added to this List.

Attention is called to the Special Journals in this List, such as the

Boston Annals of Gynæcology,
Detroit Index Medicus,
New York Medizinische Presse,
Phila. Archives of Pediatrics.

Address,

The ANALYST PUBLISHING CO.
19 PARK PLACE,
NEW YORK.

SWIFT'S
Choice Chicago Dressed Beef
— AND —
MUTTON.

CAN be found at all times in full supply and at popular prices at the branch houses in all the larger cities and is ***retailed by all first class butchers.***

The trade of all marketmen and meat dealers is solicited for our Wholesale Branch Houses, and the ***public may rest assured*** *that in* ***purchasing our meat*** *from dealers they will* ***always receive the best.***

SWIFT AND COMPANY,
UNION STOCK YARDS,
CHICAGO, ILLS.

Tabasco Pepper Sauce
OR LIQUID PEPPER.

Is simply the Pulp of the Ripe Pepper Extracted by Pressure.

The seed of this Pepper was obtained from Central America, and by careful cultivation in Louisiana for many years has been so improved in strength, flavor and aroma, as to have become a new variety of Red Pepper, superior to all others. The pulp is so handled as to retain all the flavor, strength, aroma and color of the ripe fruit, and to keep unimpaired in any climate. It excites the appetite, promotes digestion, and is pronounced, by connoisseurs, to be the finest condiment in the world. For medicinal purposes it recommends itself by its purity, strength and diffusible form.

Manufactured by E. McILHENNY,
NEW IBERIA, LA.

For Sale by all Wholesale Grocers.

CARNRICK'S SOLUBLE FOOD

IS UNLIKE ANY OTHER INFANT'S FOOD THAT HAS EVER BEEN PRODUCED.

℞

THE FORMULA.

Partially Predigested Milk Solids,	**45 parts.**
Wheat with the Starch converted into Dextrin,	**45 "**
Milk Sugar,	**10 "**

We do not claim this food to be "a **perfect** substitute for human milk." But we do claim that **Carnrick's Food approaches nearer to human milk in constituents and digestibility than any other food that has ever been produced**, and that it is the only infant's food that will, without the addition of cow's milk, thoroughly nurse a child from its birth.

We believe that **Carnrick's Food** solves the problem of a reliable substitute for human milk. The Caseine of cows' milk, by partial predigestion with freshly made Pancreatine, is rendered as easily digestible by the infant as human milk.

We have never published an analysis of **Carnrick's Food** "prepared with milk," for, unlike all other foods, it is prepared by the addition of water only, and we base our claim upon the intrinsic value of the food as compared with an equal amount of solid constituents of human milk. All other analyses or comparisons are misleading. We challenge similar comparisons with any other food, and confidently believe, that if **Carnrick's Food** is depended upon for the nutrition of infants, the great mortality among children will be reduced. Full information regarding the process of manufacture will be cheerfully furnished, and samples sent free to those who wish to test **Carnrick's Food.**

REED & CARNRICK, New York.

GORDON & DILWORTH

MANUFACTURING PURVEYORS

Established 1847

ALIMENTARY PRODUCTS

ALL OF OUR PRODUCTIONS BEAR THIS TRADE MARK

WE WILL PROSECUTE ALL INFRINGEMENTS & IMITATIONS







CHOICE DESSERTS

OVER 100 DOMESTIC & FOREIGN FRUITS AND VEGETABLES TRANSMUTED INTO TABLE DELICACIES

PRICES ON PRESERVED FRUITS REDUCED 1ST DEC. 1885

PRESERVED, CANNED & BRANDY FRUITS, FRUIT JELLIES, VEGETABLES, TOMATO CATSUP, SYRUPS & JAMS, SALAD DRESSING, BLACKBERRY BRANDY, MINCE-MEAT, PLUM PUDDING, SWEET PICKLES, OLIVES & CAPERS, WINE JELLIES, MARMALADE, SOUPS SAUCES &c.

SOLD BY THE LEADING GROCERS ON THE AMERICAN CONTINENT.

SCOTT'S EMULSION

OF PURE COD LIVER OIL WITH HYPOPHOSPHITES OF LIME AND SODA.

THE STANDARD EMULSION OF COD LIVER OIL THROUGHOUT THE WORLD.

A BEAUTIFUL CREAMY MIXTURE—ALMOST AS PALATABLE AS MILK.

Having much greater remedial power than the crude Cod Liver Oil, without any of its nauseating effects.

Its PALATABLENESS, EASE OF DIGESTION, and long tolerance by most sensitive stomachs as well as its reliable therapeutic effect, has given it special favor with the medical Profession, and receives their unqualified endorsement and support.

Possessing as it does the tonic and stimulating properties of the Hypophosphites in combination with the strengthening and fattening qualities of the Cod Liver Oil—gives it a remedial value in WASTING DISEASES, ANÆMIA or IMPOVERISHED BLOOD, EMACIATION and CONSUMPTION—unequalled by any single or combined remedy in existence. The rapidity with which delicate children fatten and grow strong on this palatable Emulsion, is very remarkable.

Samples will be sent free except express charges to any wishing to try this preparation. For sale by all druggists.

SCOTT & BOWNE, New York.

MALTINE

MALTINE is far superior in nutritive and diastatic value to any Malt Extract manufactured in the World. There is no reconstructive that excels Maltine in Phthisis and many wasting Diseases.

MALTINE in its different forms is the only malt preparation we now employ, being so palatable, digestible, and easily assimilated. Of its efficiency in appropriate cases there is no more doubt in our minds than there is of the curative power of Quinine, Cod Liver Oil, the Bromides, and the Iodides.
It deserves to stand in the front rank of constructives, and the constructives by their preventive, corrective, and curative power are probably the most widely useful therapeutical agents that we possess.
PROF. L. P. YANDELL.

MALTINE is a valuable food, a food of priceless value at times of emergency. In fact, in very grave gastric cases it is a food which may be often resorted to when at one's wits end what to do.
J. MILNER FOTHERGILL.

Out of 14 trade samples of Malt Extract examined by Messrs. Dunstan & Dimmock, ONLY THREE possessed the power of acting on starch. These brands were MALTINE, Corbyn, Stacey & Co.'s Extract, and Keppler's Malt Extract. WILLIAM ROBERTS, M.D., F.R.S.

I have subjected "Maltine" and all other leading "Extracts of Malt" to an exact quantitative comparison of their diastatic activity. The results demonstrate conclusively the far greater diastatic value of Maltine, and enable me to state, without any qualification whatever, that it far exceeds in diastatic power any of the six preparations of Malt which I have examined. R. H. CRITTENDEN.
Professor of Physiological Chemistry in Yale College.

At the International Health Exhibition held in London, England, the only gold medal and the highest award of merit were given to Maltine by a Jury composed of the best chemists in Europe, and recent analyses made by the most reliable authorities in Europe and America prove conclusively that Maltine—in nutritive and diastatic value—is superior to all other malt preparations now in the market.

NOTE.—Physicians will observe that Maltine, as now prepared, is not so viscid as formerly made, being of a more fluid consistency; and, while retaining the nutritive and diastatic value which has given it precedence over all other Extracts of Malt, it is rendered entirely agreeable to the taste of the most fastidious, and is more easily administered. As now prepared, we positively guarantee that Maltine will not ferment or congeal in any climate or at any season of the year.

COMPLETE LIST OF MALTINE PREPARATIONS.

MALTINE (Plain).	MALTINE with Phosphates, Iron Quinia, and Strychnia.
MALTINE with Alteratives.	MALTINE Ferrated.
MALTINE with Cod Liver Oil.	MALTO-YERBINE.
MALTINE with Hypophosphites.	MALTO-VIBURNIN.
MALTINE with Peptones.	MALTINE with Cascara-Segrada.
MALTINE with Pepsin and Pancreatine.	

Physicians may obtain Maltine from all druggists in every part of the world. In cases where the physician intends to prescribe Maltine, the word "Maltine" should be written, and not simply the words "Malt Extract," or "Extract of Malt."
Send for Pamphlet giving comparative analyses by 100 of the best Analytical Chemists in this country and Europe.
We will be happy to supply any regular practitioner with eight ounces each of any three Maltine compounds that may be selected from our list, providing he will agree to pay express charges on same.

THE MALTINE MANUFACTURING CO.,
54 Warren Street, New York.
Laboratory, Yonkers-on-Hudson.

In corresponding with Advertisers, please mention the AMERICAN ANALYST.

ARMOUR & CO.
CHICAGO, ILLS.

PACKERS OF

Pork and Beef Products

CANNED MEATS,

ETC.,

FOR HOME CONSUMPTION AND FOR EXPORT

TO ALL PARTS OF THE WORLD.

Also,

SHIPPERS OF

Choice Dressed Beef,

MUTTON AND HOGS,

In Refrigerator Cars,

To BOSTON,
NEW YORK,
PHILADELPHIA,
BALTIMORE,

And other cities throughout the country.

ESTABLISHED IN LONDON 1831.



W. G. DEAN & SON,

MANUFACTURERS OF

PASTE AND STICK

LICORICE

PURE CALABRIA, Equal to the Imported

Try our SICILY (brand select).

BEST IN THE MARKET.

Also LICORICE TABLETS.

361 & 363 Washington Street,
And 84, 86 & 88 North Moore St.,
NEW YORK

W. G. DEAN,
HARRY W. DEAN.

THE

CHRISTIAN MOERLEIN
Brewing Co.,
CINCINNATI, U. S. A.,

Brewers of the far-famed

"NATIONAL" EXPORT

(The Queen of Beers)

LAGER.

Owing to its absolute purity, beautiful pale color, fine aroma and nutritious qualities, the above beer has become the PRIME FAVORITE in all the principal hotels and clubs, and in thousands of families throughout the West and South.

Pure LAGER BEER,

"IMPERIAL" and "CULMBACHER"

Brewed & Bottled
SPECIALLY FOR
HOTELS, CLUBS
AND
PRIVATE FAMILIES
BY
Beadleston & Woerz
291 W. 10th St. New York.
Orders by Postal Card promptly attended to.

GREENWAY'S PORTER

—AND—

DOUBLE AND EXTRA DOUBLE STOUT.

GREENWAY'S ALE.
INDIA PALE
IN GLASS OR WOOD
AMERICAN
TRADE MARK.
SEND FOR CIRCULARS.
FULLY EQUAL TO THE BEST IMPORTED.
FOR FAMILY OR CLUB USE.
RECOMMENDED BY OUR BEST PHYSICIANS.
FOR SALE BY ALL FIRST CLASS GROCERS AND DEALERS.
THE GREENWAY BREWING CO.
SYRACUSE, N.Y.

Greenway Bottling Co.,

BOTTLERS OF

GREENWAY BREWING CO'S BRANDS OF ALE, PORTER, DOUBLE STOUT

—AND—

Germania Brewing Co's Standard Pale Crown Lager & Culmbacher.

N. Y. Depot, 31 Broadway.

FULL WEIGHT
PURE
DR. PRICE'S
CREAM
BAKING
POWDER
MOST PERFECT MADE

Its superior excellence proven in millions of homes for more than a quarter of a century. It is used by the United States Government. Endorsed by the heads of the Great Universities as the Strongest, Purest, and most Healthful. Dr. Price's Cream Baking Powder does not contain Ammonia, Lime or Alum. Sold only in cans.
PRICE BAKING POWDER CO.
NEW YORK. CHICAGO, ST. LOUIS.

STERLING


BAKING
POWDER
MADE FROM
99 50/100 PURE CREAM TARTAR.
This powder never varies. A marvel of purity, strength and wholesomeness. More economical than the ordinary kinds. SOLD ONLY IN CANS.
STERLING MANU'F'G CO.,
12 & 14 Spruce St., New York.

"GOOD MORNING"
COFFEE PERCOLATOR.
RICHEST, PUREST, BEST CUP OF COFFEE EVER MADE.
SIMPLEST AND QUICKEST PROCESS.
RETAINS THE FULL STRENGTH AND AROMA, BUT HAS NO BITTER TASTE.
ONE POUND OF COFFEE WILL GO TWICE AS FAR AS BY ANY ORDINARY METHOD.
FOR SALE BY THE TRADE.
ARE YOU A GOOD JUDGE OF COFFEE?


IF YOU CANNOT PROCURE IT IN YOUR TOWN, WRITE TO
MANNING, BOWMAN & CO.
57 Beekman St., New York.
Circulars and Price List sent Free on Application.

AMERICAN ANALYST CLUB RATES.

	Regular Price.	Price including American Analyst.		Regular Price.	Price including American Analyst.
American Magazine	$3 00	$3 00	Harper's Young People	$2 00	$2 25
American Rural Home	75	1 05	Harper's Weekly	4 00	4 00
American Agriculturist	1 50	1 60	Harper's Monthly	4 00	3 50
Arthur's Home Magazine	2 00	2 00	Household	1 10	1 35
Babyhood	1 50	1 60	Housekeeper	1 00	1 25
Ballou's Magazine	1 50	1 75	Ledger	3 00	3 00
Cassell's Family Magazine	1 50	1 75	Lippincott's Magazine	3 00	2 50
Century	4 00	4 25	New York Weekly	3 00	3 00
Christian Herald, N. Y.	1 50	1 50	Our Little Ones and Nursery	1 50	1 65
Christian Union	3 00	3 00	Peck's Sun	2 00	2 25
Country Gentleman	2 50	2 50	Peterson's Magazine	2 00	2 00
Demorest's Magazine	2 00	2 00	Puck	5 00	4 50
Family Story Paper	3 00	3 00	Rural New Yorker	2 00	2 80
Farm and Fireside	50	1 00	Saturday Night, Philadelphia	3 00	3 00
Fireside Companion	3 00	3 00	Saturday Evening Post, Philadelphia	2 00	2 00
Frank Leslie's Illustrated Newspaper	4 00	4 00	Scientific American	3 00	3 25
Frank Leslie's Popular Monthly	3 00	3 00	Scribner's Magazine	3 00	3 00
Galaxy of Music	1 00	1 25	Vick's Illustrated Monthly	1 25	1 50
Gleason's Home Circle	2 00	1 50	Western Rural	1 50	2 00
Godey's Lady's Book	2 00	2 25	Wide Awake	2 40	2 60
Golden Days	3 00	3 00	Yankee Blade	2 00	1 50
Good Housekeeping	2 50	3 00	Young Ladies' Journal	4 00	3 50
Harper's Bazar	4 00	4 00	Youth's Companion	1 85	2 25

If any paper is desired, not mentioned in the above list, a postal card inquiry will receive a prompt reply. Address,

THE ANALYST PUBLISHING CO.,
19 Park Place, New York.

See Club Rates for Medical Journals on page 448.

ESTABLISHED 1872.
GELATINE.
JAMES CHALMER'S SON'S
Transparent Gelatine.
PURITY—STRENGTH.
Best for Family Use.
Jellies, Blanc Mange, Etc.
ACKNOWLEDGED BY EVERY ONE EQUAL TO THE BEST.

Good Agents
To obtain Subscriptions for
AMERICAN * ANALYST
WANTED ON LIBERAL TERMS.

AMERICAN ANALYST

FOR THE

FAMILY AND CONSUMER.

A SEMI-MONTHLY ADVOCATE OF PURE FOOD AND THE SUPPRESSION OF ADULTERATION.

Office, 19 Park Place.

[Entered at the Post Office at New York, as Second Class Matter.]

VOL. IV.—No. 22. NEW YORK, NOVEMBER 15, 1888. Whole No. 94

CONTENTS.

An Ancestral Wraith. Complete Story..... 453
Answers to Correspondents..... 458
Beef, as it Was and Is..... 459
Book Reviews..... 461
Cigarettes Defended..... 459
Curative Honey..... 456
Domestic Dietetics..... 460
Editorial..... 458
An Enormous Project; Interesting to Inventors; A Monstrous Proposition; French Food Inspection; Food for Phosphorous; The Cigarette Question; What Must the Butter Be?
Frog Culture a Delusion..... 457
Fortunes in Patents..... 456
Honey, Eucalyptus..... 456
Inch and Ounce..... 455
Japanese Faience..... 457
Soap in Popular Science..... 460

AN ANCESTRAL WRAITH.

Now I shall not attempt to offer any explanation of the events I am about to relate—in fact, I frankly confess that to me they are inexplicable; if, however, they appear otherwise to any of my readers, I shall be delighted to hear their views upon the subject.

In justice to myself, I must in the first place, observe that I am singularly devoid of the imaginative faculty; I have never written a verse of poetry or experienced a thrilling emotion; in a word, I belong emphatically to the class of individuals called, by friends, matter-of-fact; by enemies, dull. All my poor mother, even, could find to say in praise of me was, "Oh, George is so steady and sensible!". That was when I was ten; now I am fifty.

I had not been long in England after my return from India, where I had passed the greater part of my life, when General Hylton asked me to go and spend a few weeks with him down in Cheshire. I accepted the invitation gladly, for the general is one of my oldest friends. My home, too, as a child, had been in that part of the world, and I was not sorry to have an opportunity of revisiting it. The old Priory, it is true, had passed out of our family nearly forty years before, having being seized by the mortgagee, a Lancashire manufacturer, who, however, had himself been obliged to sell it during the great cotton famine. Since then it had been in the market several times, and no sooner was I in Cheshire than I heard that Mr. Foster, its present owner, wished to let it. I was at once seized with a violent desire to obtain possession of this old homestead, that my father had so heedlessly parted with. I talked the matter over with the general, who volunteered to ask Mr. Foster to dinner that we might see how the land lay. To my great satisfaction, Mr. Foster, when he arrived, seemed to be by no means averse to the idea of selling the Priory.

"It is a lovely old place," he said, "and it suits me exactly. I can catch the Liverpool express only two miles off, you see; I shall never find another house I shall like so well; but Nellie never seems happy there, and the doctor thinks we had better take her away.

He spoke rather sadly, I thought. I inquired if Miss Foster had long been delicate.

"Oh, no; it is no question of health," he replied, looking rather embarrassed. "The place suits her well enough; but, you see, she is our only one, so we must humor her."

"She doesn't like the Priory, then?"

"I don't know." He seemed puzzled to explain what he meant. "Girls will get strange fancies into their heads, you know. Nellie is as sensible a girl as ever lived on all other points; but ever since we came to the Priory, not quite a year ago, she has taken up the idea that you Thynnes—your ancestors, of course, are moving about in the rooms. She has given us a nasty turn more than once about it. Of course it is all nonsense, but what's the good of attempting to reason with women? So, you see, the sooner I'm rid of the Priory the better. Come over and dine with us to-morrow, and then you will see the old place—I don't fancy it is much changed since you lived there—and we can talk the matter over." Nothing loth, I consented, and as the general had another engagement, I drove over the next day alone. It was a lovely evening, I remember, with just that little touch of crispness in the air that gives to September its peculiar charm. The way to the Priory lay along the banks of the Dee, beyond which the Welsh hills rose with their great bold curves, stretching against the sky. The road on either side was lined with tall trees in all the purple glory of autumn foliage, lit up that night into strangely vivid beauty by the golden rays of the setting sun. Every tree, every branch, seemed unchanged since the time I had driven there last—by my mother's side, nearly forty years before.

It was almost dark when I arrived at the Priory—too dark to distinguish anything but the dim outline of its gray walls; but a cheerful light streamed from the hall door, which was open as I drove up. The hall (the old refectory) is the finest room in the Priory; many a good game of play have I had there as a boy. Exactly opposite the entrance is a large open stone fireplace, in which great logs of wood were burning that night, and casting the bright, friendly blaze I had seen from the drive. On the right hand, as you enter, there is a solid oak staircase, up which, if tradition speaks truly, the Lady Betty, a far-off ancestress of mine, bent upon not being outdone, even by her sovereign, once rode a favorite mare. Opposite the staircase is the passage to the principal apartments.

As I crossed the threshold I was startled by seeing a gentleman in fancy dress standing by the fire. He was decidedly a handsome man, with a face that I seemed half to recognize, although I should have been puzzled to say where or when I had seen it. He advanced a step towards me, and then stopped, smiling and bowing with ceremonious courtesy. I bowed, too but as the butler paid no attention to the gentleman, but led the way straight to the drawing-room, I was obliged to follow, which I did, feeling rather annoyed with myself for being there. Evidently there was a fancy ball or theatricals in the house that night, and Mr. Foster had forgotten the fact when inviting me. In the drawing-room, however, where there were some half dozen people assembled, every one was in ordinary evening dress; I felt puzzled for a moment, but there was no time to make inquiries, as dinner was at once announced, and I was presented to Miss Foster whom I was to take in. She was a pretty, delicate looking girl, with large blue eyes—beautiful eyes as far as color goes, though, for my taste, they were spoilt by their strange, almost uncanny expression. I could not define it; if it had not been for the manifest absurdity of the idea, I should have said the girl was suffering from some terrible anxiety or fear, even while eating dinner. But she was a gentle, kindly little thing, and, as time went on, my prejudice vanished. We were at dessert, I think, when I asked her if we were not going to have some acting that evening.

"Acting!" she repeated, wonderingly; "no; what made you think of such a thing?"

"Why, when I arrived I met in the hall a gentleman in fancy dress, or so I thought."

The girl, white with terror, seized my arm. We all looked at her in amazement. Had she lost her senses?

"Nellie, my dear child, what is the matter?" asked her father coming to her side.

She sat there speechless, trembling in every limb. Her parents gave her *sal volatile*. They strove to soothe and comfort her. For some time all their efforts were in vain. At length, in answer to their entreaties to tell them what had frightened her, Miss Foster said, half reproachfully: "You always told me it was my fancy, and now Colonel Thynne has seen it, too." The girl covered her face with her hands in renewed terror. All eyes were turned upon me.

"What have you seen?" Mr. Foster asked, almost fiercely.

"Nothing. I don't know what you mean," I replied, completely mystified.

"What have you been saying to my daughter that has frightened her?"

"I cannot imagine. I merely said that I thought there was going to be some acting, or something of that sort, here this evening, as I met a gentleman in fancy dress in the hall."

"A gentleman in fancy dress!" exclaimed Mrs. Foster. "Impossible. I beg your pardon, colonel, but you must have been mistaken. We have no guests excepting those who are here. It must have been one of the servants."

I noticed that she was almost as pale as her daughter. "But the fellow bowed to me when I came in, and a right good-looking fellow he was, too. He was no servant—of that I am sure."

Among the guests there was an old Dr. Boulteel. I saw him cast a professional sort of glance at me, as much as to say he would like to feel my pulse, and he muttered something about Indian climate.

"Will you describe this mysterious individual?" he inquired, with a queer smile, which I did not understand.

LACTOPEPTINE,

The most important remedial agent ever presented to the Profession for Dyspepsia, Vomiting in Pregnancy, Cholera Infantum, Constipation, and all Diseases arising from imperfect nutrition.

Lactopeptine precisely represents in composition the natural digestive juices of the Stomach, Pancreas and Salivary Glands, and will, therefore, readily dissolve all foods necessary to the recuperation of the human organism.

CAUTION

We regret that we are compelled to caution the profession in prescribing Lactopeptine, but very careful investigation has proven to us clearly the necessity of it. Substitution of cheap and worthless compounds are being made in many cases where Lactopeptine is prescribed.

Lactopeptine is always UNIFORM, and its effects are SPECIFIC, and no one has ever been able to imitate its digestive value. If you do not obtain positive results when you prescribe Lactopeptine, you can be sure that some substitution has been made, and in such cases it may be necessary for the physician to prescribe Lactopeptine in the original ounce package to insure certainty of obtaining the genuine article. We can confidently make this assertion, knowing the scrupulous uniformity in digestive value of every ounce of Lactopeptine.

Lactopeptine has always been kept strictly in the hands of the Medical Profession, never having been admitted in any publications but Medical Journals. It is prescribed by the most intelligent and educated physicians in all parts of the world, and there are but few physicians who have ever used Lactopeptine that will not agree with the late Prof. L. P. Yandell, when he says: "Lactopeptine is one of the certainties in medicine, and in this respect ranks with Quinine."

In the various forms of Dyspepsia, in vomiting in Pregnancy, and in Mal-nutrition of children, there is no known remedy so positive in results.

P. O. Box 1574. THE NEW YORK PHARMACAL ASSOCIATION, NEW YORK.

"Certainly. He was a tall, well-made man, standing six feet, at least, with a cleanshaven face. He was dressed as one of Charles' Cavaliers, and had long, light curls on his shoulders—a wig, I suppose."

Miss Foster touched my arm and pointed to a picture let into the wall above the chimney-piece. It had been in the shade before; but, whilst I was speaking, she had raised the lamp so that the full light fell upon it. It was a life-size portrait of the man I had seen, standing by the side of a singularly beautiful girl, with quantities of long golden hair. She had a wonderfully lovely face, although, in the picture, it was almost tragic from its sadness.

"Why, there he is, dress and all!" I exclaimed, triumphantly. "Who is he?"

Dr. Boulteel examined me even more curiously than before. "That gentleman, Col. Thynne," he remarked, dryly, after a pause, "is one of your own ancestors, a Sir Jasper Thynne, the Lord Lieutenant of this county, and a great man in his day—somewhere about two hundred years ago, I think," he added, with a smile.

This was becoming uncanny. I tried to laugh it off. "Oh, of course, I must have been mistaken then; but really the likeness is striking."

"You were not mistaken," Miss Foster replied. She was still very pale, but she spoke with calm decision. "From the day we entered this house I have never been alone for one moment without having an indefinable feeling that that man was hovering about me. At first I thought it was a mere fancy, the result of the subtle fascination the picture has always had for me; but during the last month, I have seen him distinctly three times."

"Nellie, child, do think of what you are saying."

"Father, it is no good: I can bear it no longer. If you don't take me from this house I shall die." And she threw herself into her mother's arms.

"It must be one of the servants masquerading for a joke," Mrs. Boulteel remarked. "But it is a cruel sport, though, and deserves to be well punished," she added, with a glance of pity at the girl.

There was but one thing to be done. The joke, if joke it were, had been played upon me, and it was for me to put an end to it. I begged Mr. Foster to give me a free hand, and he seemed quite grateful to me for taking the initiative; then, requesting every one to remain in the dining-room until my return, I made my way into the hall. The man in fancy dress was standing there just as I had left him.

I sprang toward him, crying: "How dare you—"

But I could not utter another word. My arms fell

MELLIN'S

TRADE MARK.

LABORA

FOR INFANTS & INVALIDS.

FOOD

The Only Perfect Substitute for Mother's Milk.

A Copy of our Book,

The Care and Feeding of Infants

will be MAILED FREE to any address.

DOLIBER, GOODALE CO.,

40-41-42-43 Central Wharf, Boston, Mass.

STEVENSVILLE MILLS.

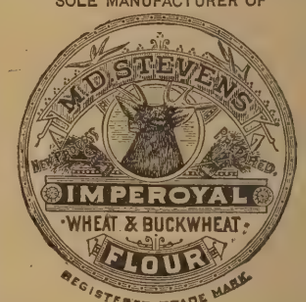
IMPEROYAL VACUUM COOKED OATS.

IMPEROYAL VACUUM COOKED WHEAT.

M. D. STEVENS'

SOLE MANUFACTURER OF

ABSOLUTE PURITY.



HOUSEHOLD NECESSITY.

ONE MINUTE IN PREPATATION.

IMPEROYAL VACUUM COOKED HOMINY.

IMPEROYAL GRIDDLE CAKE FLOUR.

Recommended by Eminent Physicians and Chemists.

☞ Adapted to all kinds of Pastry, Bread, Biscuit, Griddle Cakes, etc., and its absolute purity and freedom from Alum, Terra Alba or any injurious ingredient, makes it a necessity in every household. No lady can afford to be without it. Sold by best Grocers.

M. D. STEVENS,

Room 18, Mercantile Exchange,

Cor. Hudson & Harrison Sts., NEW YORK.

Doctor

Cupid's

Advice



It is a full and complete diet, prepared with water only. Always uniform in quality and the most economical food available.

THOMAS LEEMING & CO., SOLE AGENTS, NEW YORK.

"OUR TWIN COMFORTS."

Two Essentials for Sound and Beautiful Teeth,



A Perfect Polisher & Thorough Cleanser

More cleanly than bristles and avoids the irritation to the **Gums**, and injury to the **Enamel**, so frequent from their use.



Conveniently Supplies the Quill and Dental Floss Indispensable for Use After Eating to Prevent Decay. Each Toothpick contains one yard Spool of Floss.

Dr. E. T. Darby of the University of Pa., Philadelphia, writes: "The two, if faithfully used will do more toward saving the teeth than all the Tooth Brushes in America."

AT ALL DRUGGISTS.

HORSEY M'F'G CO., Utica, N. Y.

helpless by my side—yes, helpless as though I were paralyzed, and my very heart seemed to cease beating, as a low, sweet, mocking laugh rang through the hall. I have seen some queer sights in my life—I was in India during the mutiny—but I never knew what real terror was until that moment.

"At length!" the figure said, with a sigh of relief. "At length! I have tried so many, and you are the first that has spoken."

The language he spoke, though English, was different from anything I had ever heard; the vowels seemed to be softened and lengthened, and that gave a quaint beauty to his words.

"Come," he said, imperatively, after a moment's pause—"come!"

I followed him mechanically, all will-power gone. He led the way up the great oak staircase. He counted the steps slowly and distinctly as he mounted. "One, two, three, four, five, six." He paused on the sixth step.

"Remember the sixth," he said, looking at me sternly. "She is there. See that she is properly buried. Surely you can do that for her, for she belongs to your race, after all?" He seemed to sneer down upon me as he spoke. "And—" here he paused, as if struggling against some impulse that prompted him to be silent. "Well, it will have to be done, I suppose," he said, surlily. Then, after a moment's delay, he added, almost fiercely: "Those who said she was faithless, lied. She was a pure, honest woman—yes, though she did hate her own husband. You understand? Isabel was pure and honest, and you may say so."

With these words he vanished, and I—strong man as I am—overcome by the strange, inexplicable horror of the scene, fell to the ground, senseless. When I recovered consciousness I was lying on a sofa in the hall, with Dr. Boulteel and Mr. Foster bending over me in evident anxiety. "There, there, you are all right now," the old doctor was saying. "You have been doing too much of late, colonel. That's always the way with these giants, Foster. When the gods give a fine physique they never give the sense to take care of it. I would back a delicate man against a strong one any day for length of life."

He watched me while he was speaking, then gave me some brandy.

It was not long before the brandy began to perform its work. Slowly I began to awaken from my lethargy, and then to take an interest in the surroundings. I wondered what had happened to me; then gradually the vision pictured itself in my mind, and I began to review the late events. Was it all a dream, and why had it such an effect on me? Evidently I was a victim to some hallucination which was unbecoming in a sane man.

Soon a sense of the absurdity of my position asserted itself. That I, one of Her Majesty's veteran troops, should have fainted like the veriest school girl, was too absurd. Evidently the doctor thought so too, for, after listening to my heart for a moment, he said, with a scarcely suppressed smile:

"Colonel Thynne, about five minutes after you left the dining-room we heard a noise as of some one falling, and we found you lying at the foot of the stairs. A lucky thing for you that your head struck on the mat; not on the stone. Have you any remembrance of what took place during that time?"

"Remembrance! Was there any fear I should have forgotten or ever should forget what I had seen and heard in those five minutes? I related exactly what had occurred.

The doctor listened attentively, and then inquired: "Have you ever had a touch of sunstroke?"

"No, never."

"Ah, I thought perhaps you had. These hallucinations often follow that sort of thing; but, in any case the Indian climate works the duce with a man's nerves. You must take life more quietly for a time. Try a sea voyage. Coming back to your old home has upset you, I suppose. You don't look an impressionable fellow, though."

Mr. Foster interrupted him. "If this be a hallucination, how do you account for Nellie's experience?"

"Oh, Miss Nellie is a nervous, susceptible girl, and the sooner you get her out of the house the better. With the colonel it is another sort of thing. Now, colonel, as between men of the world, what do you think of this affair yourself?"

"I cannot think of it—that's just the point; but I should like that sixth step to be taken up."

"My dear colonel," the doctor began; but again Mr. Foster interrupted him.

"You are right, Thynne; it shall be taken up at once."

But easier said than done; the servants were summoned, a carpenter sent for, but it is no light task to take up a solid oak step. Fully an hour had passed before even the first block could be removed. When this was done we found that underneath it were other planks, scarcely less solidly fixed.

"Foster, this really is nonsense, pulling your house to pieces in this way. What will Mrs. Foster say?"

But scarcely had the doctor finished speaking when one of the men called out that he could see the corner of an iron box. In a moment our coats were off; side by side with the servants were all struggling to drag out of its resting-place a great iron deed-box, of the same sort and size as those which I can remember used in the old days to stand in the Priory strong-room. It was about six feet long and perhaps two broad.

The box we found was securely locked, which caused a further delay, and the time seemed interminable before it could be opened. At length the lid was raised, and revealed to our view a small-sized skeleton, partially covered by a gown of quaint brocade, inwrought with threads of gold. Of the face and neck nothing but the bones remained, though all around them, forming as it were, a glittering pillow for the ghastly, eyeless head to rest upon, lay masses of long, bright, golden hair.

In our family annals stand the following records:

* * * * * * * *

"Jasper Thynne, son of the above, third baronet, born February 1, 1645. Married Isabel, daughter of the Count Theodor of Valsarsina, May 13, 1674. Killed in a duel by the said Count Theodor of Valsarsina, May 13, 1675."

There is a short marginal note attached to the announcement of Sir Jasper's marriage, setting forth that the Lady Isabel left her home secretly during the night of September 17, 1674, and that, although her husband, Sir Jasper, sought for her with all diligence to the day of his death, he was never able to discover either her retreat or the name of her lover.

Who was the writer of that note? Was it Sir Jasper?

Now is the time to subscribe for Volume Five.

INCH AND OUNCE.

DERIVATION OF THOSE STANDARDS OF MEASUREMENT.

As the Jews had a mystical reverence for seven and the ancient Welsh and Celts for three, and the Greeks a perfect philosophy constructed out of the harmonies of all sorts of numbers, so the Romans fell back upon a scale of, or more properly upon a scale with a base of six. Accordingly, as they divided the pound into twelve unciæ, so they also divided the foot, which was the standard of lineal measure, into twelve sections, and they called these sections unciæ, too. But how did they get the inch originally? Rather, how did they get at the pound? For that, and not the inch, is the unit. There seems to be no precise information. They would divide any unit into twelfths, and a prevailing notion was at one time that the linear uncia was really the original and was then transferred as a name to a weight. This, though plausible, is hardly the case. Sometimes, especially in old books, written when philology was not what it is now, it was the fashion to derive the unciæ from the same word in the Greek, because after the revival of letters in Europe the admiration of the Greek became so great that whenever similar words were found in it and some other language it was always said that the other language borrowed them from the Greek. This is very far from being always so; and in the present instance the very reverse appears to have occurred. The ounce is literally the twelfth; and thus we see at once the sense of speaking of an ounce of land and an inch of milk, just as of an inch of a man's will or an inch of interest for money on a loan. It was always the twelfth of a unit—twelfth of an hour; twelfth of a jugerum, that half acre which the two oxen plowed in a day; twelfth of a sextarius, or equivalent to our pint: twelfth of the entire hereditis; twelfth of the principal lent on hire when it was money as usury—*i. e.*, over 8 per cent. It is accordingly as much of a mistake to say that the primary meaning of the word is a linear, which is to say that it comes straight from the Greek into the Latin, and thence on to us. The riddle is plain enough when we get to the true origin of the word—a twelfth. Once, indeed, it used to be said that the true origin was that the word meant a thumb breadth, because its equivalent, pollex, in linear measure was often used in its place. But this is not the case. Some of the old Latins themselves, moreover, thought it meant literally the unit; but even this will not hold beside the proper signification of twelfth. The pound weight really never divided by inches or ounces, it was divided by twelfths, by halves, by thirds, by fourths, and by sixths. And here, again, we see what a convenient base a system of twelfths is for division compared with a system of tenths, which could only be divided evenly in two ways—by two and five. For seven ounces they use the literal seven-twelfths; for eight ounces they said two parts—*i. e.*, two-thirds; for nine, wanting a fourth, which with us reads like a roundabout way of expressing three-quarters; for ten, wanting a sixth; for eleven, wanting a twelfth.

WHY STEEL IS HARD TO WELD.—A metallurgist gives as a reason why steel will not weld as readily as wrought iron that it is not partially composed of cinder, as seems to be the case with wrought iron, which assists in forming a fusible alloy with the scale of oxidation formed on the surface of the iron in the furnace.

A GREAT FALL.—Labrador is said to possess a waterfall that makes Niagara Falls insignificant in comparison. R. F. Holme, who recently made a tour of Labrador locates this fall on the Grand River, which connects Lakes Petchikapou with Goose Bay, at the head of Hamilton Inlet. Up this river 150 miles is Wiminikapou Lake, and 30 miles further up the river is located the Grand Falls, in the break of a plateau, the Labrador table-land, 2,000 to 2,300 feet above the lake. Mr. Holme says the Grand river is 1,500 feet wide at the fall, and the height of the fall is estimated to be nearly 2,000 feet. Maclean, who explored Labrador in 1839, does not mention this fall.

FORTUNES IN PATENTS.

GREAT WEALTH DERIVED FROM SUCCESSFUL INVENTIONS.

The Commissioner of Patents estimates that "from six to seven eighths of the entire manufacturing capital of the United States, or six hundred millions of dollars, is directly or indirectly based upon patents." A calculation of the same kind in England, according to the London *Inventor*, reveals a still more surprising result, the capital invested being enormous. It has been computed that Siemens' inventions have produced more than five millions sterling. "There is," says an eminent authority, "scarcely an article of human convenience or necessity in the market to-day that has not been the subject of a patent in whole or in part. The sale of every such article yields its inventor a profit. If we purchase a box of paper collars, a portion of the price goes to the inventor; if we buy a sewing machine, the chances are that we pay a royalty to as many as a dozen or fifteen inventors at once." Lord Brougham often said that he would gladly have exchanged his honors and emoluments for the profits and renown of the inventor of the perambulator or sewing machine. The profits annually divided by our several sewing machine manufacturers are phenomenal in amount. "More money has been, and always can be, made out of patented inventions than by any other investment or occupation." The telephone, the planing machine, and the rubber patents realized many millions, while the simple idea of heating the blast in iron smelting increased the wealth of the country by hundreds of millions. The patent for making the lower end of candles taper instead of parallel, so as to more easily fit the socket, made the present enormous business of a well-known firm of London chandlers. The drive-well was an idea of Colonel Green, whose troops, during the war, were in want of water. He conceived the notion of driving a two inch tube into the ground until water was reached, and then attaching a pump. This simple contrivance was patented, and the tens of thousands of farmers who have adopted it paid him a royalty until the recent decision of the Supreme Court, which was adverse to sustaining the patent. A large fortune was realized by the inventor who patented the idea of making umbrellas out of alpaca instead of gingham, and the patentee of the improved "paragon frame" (Samuel Fox) lately left by will £170,000 out of the profits of his invention. The weaving, dyeing, lace and ribbon making trades originated and depend for their existence upon ingenious machinery, the result of an infinity of inventive efforts. Carpet beating, from being an untold nuisance, has become a lucrative trade through the same inventive genius and mechanical contrivance. Even natural curiosity has been turned to account in the number of automatic boxes for the sale of goods of all kinds, and fabulous dividends have been paid by the public companies owning the patents. In fact, any one can be a successful inventor. In proof of this, the most profitable inventions are the improvements in simple devices, things of every day use that everybody wants, and which are in the power of everybody to invent. A lady derived a large income for inventing a moving belt for drying eggs, albumen, etc.

CURATIVE HONEY.

VALUABLE PROPERTIES OF HONEY FROM THE EUCALYPTUS TREE.

Honey from the bluegum is not gathered by the ordinary bee, but by a much smaller species—a native of Tasmania. The eucalypts being biennial, this honey is only obtainable every two years; but it does not during that period lose any of its important constituents. It is of a deep orange color, of a transparent sirupy consistency in warm weather; but in this country it is usually partly solidified. It has the characteristic odour of the eucalyptus essences, and also their flavor. It is said to contain about 62 per cent. of the purest sugar, and over 17 per cent. of the essential constituents of the eucalyptus consisting of eucalyptol, eucalyptene, cymol, and terpene, all of which play an important part in the therapeutics of the present day. It was thought that a similar honey could be obtained by mixing these ingredients; and experiments were tried in Paris, but without success, as it was found that the ingredients gradually separated and volatilized off. Eucalyptus honey is destined to take an important place as a therapeutical agent and as an article of food, on account of the unusually large percentage of sugar it contains and of the presence of the eucalyptus essences, the properties of which as antiseptics and deodorisers are well known. It is usually given in warm milk or warm water. One or two teaspoonfuls twice or thrice daily have produced beneficial effects on bronchitis, asthma, and diseases of the lungs and respiratory organs, producing elasticity of the lungs and a decided increase of the vocal powers. The breath is said to be perfumed, and a sense of warmth and well-being to pervade the body. The field for such an important honey would almost appear unlimited, owing to its antiseptic properties; and already cases have been recorded of its use in typhoid gastric infection, whooping cough, and catarrhs. As a substitute for cod liver oil the advent of eucalyptus honey will be hailed with delight by all who have to undergo the nauseous experience of a course of this oil, while its nutrient powers are not thought to be inferior. Much interest was created a short time since by the chemical analysis of the famous Trebizond honey, which produces narcotic effects upon all who take it, followed by strong excitement and toxic effects. It was carefully analyzed in this country, and its ingredients when separated were tried physiologically upon animals with a two-fold object: firstly, to ascertain the nature of the poison; and secondly, to determine, if possible, by this means the species of plant the bees producing this honey frequented. The results thus obtained led the experimentalists to suspect a certain plant; and communications were made to friends residing in the districts whence this honey was sent as to the names of the plants mostly abounding in the neighborhood. It was thus ascertained that the bees relied upon a poisonous plant for their honey. There are now many honeys containing either toxic properties or peculiar odors, which have been traced to the bees frequenting a certain plant; for instance, the Narbonne honey owes its peculiar flavor to the rosemary, which grows so profusely in the neighborhood. Another instance is that of the Mount Hymettus honey, which derives its flower and odor from the labiates. With such facts before us we should not be surprised to see our Australian brethren's example followed in this country, and apiaries started for the production of honey of a distinct flavor, odor, and effect.

BURNETT'S
PERFECTLY PURE HIGHLY CONCENTRATED
Standard Flavoring
EXTRACTS

THE superiority of these Extracts consists in their
PERFECT PURITY AND GREAT STRENGTH.

There is no subject which should more engross attention than the purity of the preparations which are used in flavoring the various compounds prepared for the human stomach.

They are not only true to their names, but are prepared from fruits of the best quality, and so highly concentrated that a small quantity only need be used.

JOSEPH BURNETT & CO., Boston, Mass.

SECRET ORDERS IN AMERICA.—In the United States there are over 200 fraternal, benevolent, social, insurance, political, religious temperance and other secret orders. Following is the official membership of some of the more prominent American organizations: Free Masons 600,000; Odd Fellows 530,000; Knights of Labor 500,000: Grand Army of the Republic 380,000; Knights of Pythias 210,000; Good Templars 200,962; Ancient Order of United Workman 191,876; Knights of Honor 124,756; The Royal Arcanum 80,000; Improved Order of Redmen 64,000; American Legion of Honor 61,664; Knights and Ladies of Honor 49,200; Sons of Veterans 47,000; Ancient Order of Foresters 38,539; Daughters of Rebekah 33,858; Knights of the Golden Eagle 30,000; Order of Chosen Friends 29,271; Independent Order of Bnai Brith 24,496; Order of United Friends 20,000; Ancient Order of Druids 15,000; Knights of the Maccabees 14,000; United Order of the Golden Cross 11,000 Benevolent Protective Order of Elks 6,600. The total number of Masons in the world is estimated at 4,000,000. The total number of Druids in the world is 67,000.

A DOLL THAT CAN TALK.—Mr. Edison has, it is stated, devised a doll with a small phonograph inside, which talks when the handle is turned. The phonograph is placed in a receptacle within the chest of the doll, and the handle protrudes. When it is turned the words appear to issue from the doll's mouth. Edison has also devised a clock which announces the time by speaking; the talking apparatus being, of course, a phonograph.

IODIDE OF STARCH.—After working upon cholic acid, and more particularly upon an iodized compound of this acid which behaves in a manner analogous to the iodide of starch, F. Mylius reinvestigated the latter compound, arriving at the very unexpected conclusion that pure iodine does not color starch blue; to obtain this coloration the presence of hydriodic acid or of a soluble iodide is necessary. The blue products known as iodide of starch should be compounds of four molecules iodide of starch with one molecule of hydriodic acid or of a soluble iodide.

TWO NEW VEGETABLE PERFUMES are said to have lately become articles of commerce. One of these is a kind of *xylopia* from the province of Chirigui, in Costa Rica. The odor closely resembles that of *Canaga odorata*, and the flowers are now used, like those of that plant, in the manufacture of ylang-ylang. The other is named *ouco*, and is the highly odoriferous blossom of a kind of acacia-tree which is found in Central Africa, and which Serpa Pinto was the first to describe. The *ouco* flowers are brought down the Cubangin River for sale. They cover the trees on which they grow with such profusion, that they fill the atmosphere with the overpowering richness of their scent.

EXPERIMENT IN CONSUMPTION.—The supposed remedial agency of the odor of cows and cow-stables in cases of consumption is to be tried at Reinickendorf, near Berlin, on a unique scale. A vast circular building has been erected, in the basement of which several hundred cows will be kept, and the odor of the stables will be conducted to the rooms in the upper stories. In the center of the building is a large yard, for which a whey-cure, bathing-rooms, etc., are planned.

MENTAL STRAIN.—A correspondent of the London *Times*, in commenting on the daily race between the two English fast trains, notes the increased mental and physical wear and tear upon the stoker and engineer, a point which has heretofore been unconsidered. The distances run are so great that oiling is necessary, and this can only be accomplished with great difficulty and danger, the force of the wind produced by the rapid motion being sufficient to take a man off his feet.

FLY INFECTION.—A contributor to "Nouveaux remedies" cites a statement by a Brazillian physician to the effect that in hot countries flies are most active agents in the propagation of yellow fever, and adds that M. Spilmann and M. Hanstoutter attribute the same role to those insects in spreading pulmonary consumption. When a fly has lingered on the tuberculous sputa, it is said, its intestine and excreta contain the bacillus of tuberculoris, which it may deposit on various articles in an apartment. Flies are credited also with being the chief instrument in the dissemination of Egyptian ophthalmia, and Koch is cited as of the opinion that they may play the same part in spreading cholera.



FROG CULTURE A DELUSION.

THE INDUSTRY NOT A PROFITABLE ONE, SAYS MR. MATHER.

In the Boston *Journal* some weeks ago appeared a quotation from another paper regarding a "frog farm," in which the extravagant statement was made that an income of $5,000 could be obtained from raising these inhabitants of the marsh for sale. Fred Mather, superintendent of the New York Fish Commission and fishery editor of *Forest and Stream*, demolishes this assertion by an interesting article in that paper. Therein he writes: For the past four years this question of frog culture has given me some trouble in answering private letters from would-be frog farmers, and is a legacy left by the late Seth Green, who wrote an article on it in the report of the New York Fishery Commission for 1873. This was widely copied, and each year some imaginative reporter gives an account of a mythical frog farm which has never existed. In 1875 this farm was located near Smithtown, Long Island, and I went there and found that there was no frog farm in that vicinity, nor was there any man living near the place bearing the name given. The next year the apocryphal farm was located near Philadelphia and I had the same experience. Since that time I have only wasted postage in the pursuit of this fabled industry. Mr. Green gave the results of two years' experience in which he gathered frog spawn and hatched it, but lost his polywogs and abandoned frog culture, but he encouraged others to try it by saying the "difficulties can be overcome by patience and perseverance." Yet he further said: "When they become frogs they live on all kinds of insects, and the only thing I can see to make success sure is to procure insects in large quantities, enough to support a great number of frogs." And here is where the impracticability of raising frogs lies. It is no trouble to gather large quantities of frog spawn and hatch millions of tadpoles, nor to feed the latter on meat and vegetation, for they eat both. The enemies of the tadpoles, or polywog, are numerous, and large frogs will eat small ones. As an instance of the latter fact, I once took a dozen large American bullfrogs to Professor Moore, of the Derby Museum at Liverpool, and they quickly swallowed the small European frogs that were in the tank where he placed them. Even if it were impossible to feed the frogs on meat, which it is not, the batrachian is of slow growth, and the balance would be on the wrong side of the ledger when they were sent to market. I will travel far to see the frog farmer "living on an income of $5,000," all from his frogs. In my long experience as a pisciculturist the frog has been under constant notice, and I have tried to feed them on meat and mussels without success. My belief is that frog culture is a delusion, and that such a thing as a frog pond does not exist, and unless some genius arises who can find a way to feed his frogs on beetles, flies and other insects, which, with some snails, constitute their natural food, there will never be a frog farm. The supply of frogs to New York markets comes mainly from Canada and places of sparse population, where they are not extensively eaten. Forty years ago Americans did not eat frogs, and every marsh in the country contained large ones. Now they are almost extinct near cities in the State of New York, and do not breed and grow rapidly enough to pay to catch them. I think it probable that the batrachians, like the reptiles, are of long life and slow growth, and that a man would get very tired waiting to see a crop mature. Perhaps he might wait ten years to get large ones, but never having raised a frog to maturity I cannot say. The belief in their slow growth is based on the fact that many polywogs do not get their legs the season they are hatched, but pass the winter in the tadpole state; this points to slow maturity.

JAPANESE FAIENCE.

HOW FINE PORCELAIN IS MADE.

Probably no country in the world possesses such resources for the manufacture of fine porcelain and earthern wares as Japan. There are nearly three hundred localities in the empire where clay is found suitable for the manufacture of porcelain without being treated to the addition of foreign matter. The constituent elements of porcelain are chiefly silica, alumina and water. The clays used by the Japanese potters are treated by being thoroughly pounded under water in pounders which are generally worked by hand. After the earthy matter has settled at the bottom of the vessel the water is poured off and the residum is dried and stored away in the form of flat cakes upon boards, or as impalpable powder in boxes. The shaping is done for the most part upon a potter's wheel, the introduction of which is attributed by the Japanese to the Buddhist priest, Giogi Boatsh, born 670, died 749, A. D. The potter's wheel in vogue among the Japanese is exceedingly simple in its construction, and consists of a round piece of hard wood well battened on the under side to prevent warping, and working upon a pivot set in a porcelain eye. The motion is communicated to the wheel in most cases by the hand of the potter himself. When other than round shapes are acquired crude moulds are sometimes used. After the clay has been shaped upon the wheel it is dried for a couple of days. It is then smoothed with a sharp knife and converted into "bisque" by a brief preliminary baking. It is then either painted and fired, or glazed and fired, if it is designed to be painted on the glaze. The ovens are generally constructed upon a hillside, one above the other, with the draft from the lowest to the highest, and an arrangement for firing each kiln separately. The consequence of this arrangement is that the upper kilns are the hottest, and the ware which requires the most intense heat is accordingly placed in these. These connecting kilns possess the merits of economizing fuel, but are not always well constructed, and there is often a want of uniformity in the heat. The Japanese display great skill in the painting of their porcelain and earthen wares. The blue color of the common ware is due to the use of cobalt. The ware is painted on the bisque before firing. The more handsome and costlier wares are painted on the glass and are subjected in some cases to repeated firings. The oxides employed in coloring are those of copper, cobalt iron, antimony, mangenese, and gold, which are mixed with a silicate of lead and potash and baked at a low temperature, though the oxides are also applied in some cases influxed and baked at a temperature which fluxes them and produces the desired color. French and German colors are beginning to be largely used. The work is done by the piece, and a good turner in a pottery establishment or enameler receives from 50 to 75 cents per diem. The best painters earn from 75 cents to $1.50 per diem. The wages are graded downward from these maximum figures to those paid boys and girls employed in the simpler operations, who earn from 10 to 15 cents a day. Japanese tastes are simple and wants few, and while from 75 cents to $1 per diem would be accounted starvation wages in America, they, in reality, represent a very just and liberal compensation in Japan.

ARTIFICIAL INCREASE OF SHAD.—A single shad produces 100,000 eggs, of which only about 5,000 are hatched naturally. By the artificial method, however, 98,000 are successfully hatched.

MACHINE FOR DISPLACING COAL.—A new hydraulic coal-getter consists of a steel bar having cavities containing small rams, which are forced out by water pressure. The water is conveyed to the machine by a copper pipe from a force-pump. A bore-hole is first made on the upper part of the working face of the seam, and the machine inserted in it. The under part of the face is then cut away, and the pump started. The pressure of the rams then brings the coal down. The coal is not broken in the process, and fourteen to twenty-four tons can, it is stated, be displaced at each operation.

ULTRAMARINE.—The color known as ultramarine was formerly the powder of the precious mineral lapis-lazuli, which is essentially a silicate of alumina with varying quantities of soda, sulphuric acid and sulphur. It was, and is now to some extent, used as a pigment by artists, but for most purposes the artificial ultramarine is used, which is made in immense quantities and at a very low cost. It is prepared by heating together a mixture of clay, carbonate of soda, sulphur and charcoal, and afterward roasting repeatedly with additional quantities of sulphur.

DO LOCOMOTIVES CAUSE RAIN?—A correspondent of the Northwestern Railway advances a curious theory for the increasing prevalence of floods and rain-storms. He says that there are over 30,000 locomotives in use in North America, and estimates that from them alone over 53,000,000,000 cubic yards of vapor are sent into the atmosphere every week, to be returned in the form of rain, or over 7,000,000,000 cubic yards a day—"quite enough," he says, "to produce a good rainfall every twenty-four hours." Estimating the number of other non-condensing engines in use as eight times the number of locomotives, the total vapor thus projected into the air every week in this country amounts to over 470,000,000,000 cubic yards. "Is this not," he asks, "sufficient for the floods of terror? Is there any reason to wonder why our storms are so damaging?"

NOISE OF TRAVEL.—Berlin engineers have adopted two different systems for diminishing the noise of trains on their viaducts. One is to bolt to the bridge structure long troughs of sheet-iron, about sixteen inches wide, so arranged that a rail will come in the centre of each. The troughs are then filled with gravel, in the middle of which is buried the longitudinal timber carrying the rail, and the space between the troughs is covered with iron plates, on which is spread a thin layer of gravel. The second method, which is found to be more efficient than the other, consists in placing a continuous series of shallow iron troughs, about five feet square, along the line of tracks. These are filled with gravel, on which the ties and rails are laid.

WONDERFUL THREAD.—C. V. Boys gives an account of some very interesting experiments in the production of the finest threads of glass and other materials. The most remarkable threads he has found are those of quartz. Of these he says: "As torsion threads, these fibres of quartz would seem to be more perfect in their elasticity than any known; they are as strong as steel, and can be made of any reasonable length, perfectly uniform in diameter, and as already explained, exceedingly fine (i. e., 'beyond the power of any possible microscope'). The tail ends of those that become invisible must have a moment of torsion of 100,000,000 times less than ordinary glass; and though it is impossible to manipulate with those, there is no difficulty with threads less than one-ten-thousandth part of an inch in diameter.

NEW DENTAL ENGINES.—Mr. Coxeter has invented an electric dental engine. The whole apparatus weighs but a few ounces, and is held in the hand when in use, like the electric mallet, which it resembles in shape. The electric current is generally by a large primary battery, or the engine can be worked by means of accumulators or a dynamo. It is spoken highly of by some dentists who have used it, but seems to be rather deficient in power for heavy work. Another invention for a similar purpose is Hastie's water motor, which was introduced by Mr. Walter Campell, of Dundee, and, as its name implies, is worked by hydraulic pressure. As it is now fitted it is almost perfect as a dental motor, but it requires a considerable force of water, and is hardly practicable unless supplied direct from the main.

American Analyst,

Published on the 1st and 15th of each month.

Subscription, - - - - - - $1 per year.
Single Copies, - - - - - - 5 cents.
Subscriptions to foreign countries, - $1.50.

Remit by Express Money Order, Draft, P. O. Order, or Registered Letter.

Advertising rates on application.

EUROPEAN AGENCIES.

On file at "American Exchange," 449 Strand, London; and American Exchange," 35 Boulevard Des Capucines, Paris.

THE ANALYST PUBLISHING CO.,
Publishers.

H. LASSING, M. D., } *Editors.*
T. P. McELRATH, }

No. 19 Park Place, ... New York.

NEW YORK, NOVEMBER 15, 1888.

CORRESPONDENTS AND EXCHANGES.

Please direct all business communications to

THE AMERICAN ANALYST,
19 Park Place,
New York.

ANSWERS TO CORRESPONDENTS.

SURVEYOR.—To adjust the cross hairs in surveying instruments spider web or uns un silk fibers, or fire platinum wire are used. They are cemented across a ring which is secured within the tube of the glass.

PHILOLOGIST.—Katzenjammer is a German word, which means cat-sickness, and denotes a malady of body and mind which results from night-life. The owl, the night-hawk the whip-poor-will and all the felines are night-prowlers. Men also have gone astray with the cats and become nocturnal, even Socrates, with all his virtues was somewhat addicted to Katzenjammer. Katzenjammer was a large factor in the decline of Athens and the chief factor in the fall of Rome.

PROGRESS.—Four-fifths of the steam machinery now in operation in the worl has been built since 1853. The total horse-power of steam engines in the United States is 7 500,000; in England 7 000,000; in Germany 4,500,000; in France 3,000,000; and in Austria. 1,500,000. Besides these 105,000 locomotives develop 3 000,000 horse power, maknig a total steam horse power of 46,000,000, equivalent to the real working power of 138,000,000 horses, or 966,000.000 men, or about twice that o the laboring population of the world.

W. H. S. PUEBLO, COL.—The hardest diamond we recall was one some time ago exhibited at the French Academy of Sciences. It was a compound crystal of the class known in France as "extreme durate," and all attempts to po ish it had been in vain. It was kept on the polishing table for 100 days, with the wheel revolving at a speed of 2,800 revolutions per minute. Calculation shows that the friction surface traversed by the facet in that time was 75,000 miles, or nearly three times the circumference of the earth. Nevertheless, the stone remained unpolished, even after the pressure on it was increased to 40 pounds. The wheel was badly damaged, the diamond ploughing into it and scattering sparks in all directions.

W. P. R.—It is sufficient answer to inform you that human blood contains from 79 to 83 per cent. of water; the gastric juice, 97 per cent.; the flesh, 77 per cent.; the skin, 58 per cent.; bones, from 7 to 20 per cent. This large percentage of water in the animal body will not appear surprising when it is remembered that a large proportion of the food we consume consists of water. Taking vegetable food first, cucumbers and mushrooms contain as much as 96 per cent.; cabbage leaves, 92 per cent.; turnips, 88 per cent.; carrots, 83 per cent.; potatoes, 75 per cent.; the various kinds of fruit, from 75 to 80 per cent.; bread from 44 to 49 per cent. Animal food is equally replete with water, the percentage of water in haddock being 82; veal, 75: beef, 74; mutton, 71. Milk contains 87 per cent. of water, and an egg 74 per cent. The list might be extended almost indefinitely.

K. F.—The widespread fear of sleep immediately after eating is largely due to ignorance akin to superstition. When such a person has taken a fairly abundant lunch or dinner the stomach demands a special influx of blood wherewith to accomplish its work of digestion; no organ can more easily comply with that demand than the brain, which, when in full activity, is suffused with a maximum amount of the vital fluid. But a derivation of blood from the brain to the stomach can only take place, except in exceptionally full-blooded and vigorous persons, on the condition that the cerebral functions be meanwhile partially or wholly suspended. Superstition, the child of ignorance, declares that sleep, during digestion, is dangerous; admonishes the would-be sleepers to struggle against their perilous inclination, and, though telling them that after dinner they may sit awhile, assures them of the adage, "After supper walk a mile." The millions of victims continue, therefore, to ignore the suggestions offered to them by the lower animals, which have always practised the lessons of sound physiology by sleeping after feeding.

AN ENORMOUS PROJECT.

The readers of the AMERICAN ANALYST were informed some months ago of a project advocated by certain of our government scientists for the redemption of the barren lands lying along the Rocky Mountains to the eastward, by a gigantic system of irrigation. The scheme, whatever its feasibility, is a stupendous idea, and the question of its practicability is likely to receive a definite solution. The last Congress appropriated $100,000 to be expended by Director Powell and his subordinates of the National Geological Survey, for an inquiry into the feasibility of building reservoirs at the head of streams west of the one hundredth meridian, so that their waters may be used for irrigating the vast arid plains below. Major Powell, the author of the scheme, believes that a system of storage reservoirs and irrigating canals may be perfected that will water at a profit fully ninety-six million acres of now barren land. At thirty dollars per acre this reclaimed region would represent $2,880,000-000 of added wealth to the nation. Discount this liberally as a roseate estimate, and it is still true that the project is one that should pay well for the millions of money required to carry it out. It is, moreover, a work that no single State can do, because of its far-reaching and expensive character. If the inquiry should result in proving the practicability of the scheme, and eventuate in the construction of the proposed reservoirs, many distant points would receive the benefit. It is not solely a plan for redeeming ninety-six million acres of land now barren, but to provide for a more equal distribution of the mighty volumes of water that every season cause the destructive floods of the Missouri and Mississippi rivers. The effect would be to reduce the overflow and the sediment of these rivers, giving their natural flow a greater current with which to keep open channels for commerce and free exit for superficial freshets. Under this completed system we may hope to see a vast diminution in the flooded area and of the enormous damage caused thereby almost annually in the two great valleys of the continent. The Geological Survey estimates that for every acre reclaimed in the arid region another acre will be reclaimed or secured against overflow along the lower Mississippi.

The undertaking proposed is one of the most stupendous projects ever conceived in behalf of a nation's agriculture. It aims to improve and ameliorate the agriculture of a quarter of a continent. The storage works in the mountains of the far northwest are designed to benefit the cotton and rice planter over two thousand miles to the south. This is a bold conception, and one worthy of the reputation and achievements of its distinguished author. Major Powell has never suggested anything that upon trial was not proved practicable. His exploration of the canyons of the Colorado river, and the reports subsequently made of that bold and extremely perilous undertaking, gave him a national fame, which has been maintained by the high character of the work performed by the United States Geological Survey under his direction. It is safe, therefore, to make the inquiry, and if satisfactory evidence is afforded that the work is feasible, then the country should engage in it. But in this, as in all other undertakings, it is best to be sure we are right before we go ahead.

INTERESTING TO INVENTORS.

The Committee on Science and the Arts of the Franklin Institute, of the State of Pennsylvania announces that it is empowered to award, or to recommend the award of, certain medals for meritorious discoveries and inventions, which tend to the progress of the arts and manufactures. These medals are:—The Elliott Cresson Medal (gold), which was founded by the legacy of Elliott Cresson, of Philadelphia, and conveyed to trustees of the Franklin Institute. By the Act of the Institution, May 17, 1849, the Committee on Science and the Arts was designated and empowered to award this medal, and the committee decided to grant it, after proper investigation and report by sub-committee, either for some discovery in the arts and sciences, or for the invention or improvement of some useful machine, or for some new process, or combination of materials in manufactures, or for ingenuity, skill, or perfection in workmanship. 2.—The John Scott Legacy Premium and Medal (twenty dollars and a medal of copper.) This prize was founded in 1816, by John Scott, a merchant of Edinburgh, Scotland, who bequeathed to the City of Philadelphia a considerable sum of money, the interest of which should be devoted to rewarding ingenious men and women who make useful inventions. The premium is not to exceed twenty dollars, and the medal is to be of copper, and inscribed, "*To the most deserving.*" The control of the Scott Legacy Premium and Medal (by Act of 1869) was transferred to the Committee on Minor Trusts, and that committee resolved that it would receive favorably the name of any person whom the Franklin Institute may from time to time report to the committee as worthy to receive the Scott Legacy Premium and Medal. The Franklin Institute, by resolution in 1882, accepted the above-named action of the Committee on Minor Trusts, and referred the duty of making such recommendations to the Committee on Science and the Arts. The Committee determined that the recommendation for such reward shall be made on the favorable report of a sub-committee which shall be appointed to examine the invention or discovery. Upon request therefor, from interested parties, made to the secretary of the Franklin Institute, full information will be sent respecting the manner of making application for the investigation of inventions and discoveries; furthermore, the Committee on Science and the Arts will receive and give respectful consideration to reports upon discoveries and inventions, which may be sent to it with the view of receiving one or the other of the awards herein-named, and full directions as to the manner and form in which such communications should properly be made, will be sent on application.

A MONSTROUS PROPOSITION.

We find in somewhat extensive circulation among our medical exchanges a proposition that seems of mediæval barbarism. Some sapient writer, with apparent sincerity, proposes that for the better study of typhoid fever, human beings be made subjects of experiment. He would give the criminal, condemned to death, the choice between death and disease, the latter probably to be followed after years of suffering by a far more painful death. It is stated that in addition to experiments upon the lower animals, human beings should also be made subjects for inoculation, although the proposition is accompanied by the promise that no mutila-

tion nor torture shall be inflicted. The spectacle of these enthusiasts, so carried away by their ambition and zeal, proposing such experiments upon their fellow man, would be laughable did it not present so large a proportion of what is sad and revolting. The body of a dead criminal is now generally reserved for dissection, but some doctors are not able to wait, they want him alive, and would even enter the prison to make use of him. In the days of the later Cæsars such a proposition would have seemed proper enough, but it has a strange sound to nineteenth century ears.

FRENCH FOOD INSPECTION.

The municipal laboratory in Paris appears to be doing solid work in the way of inspecting, making analyses of and passing judgment on, the various articles of food, that enter into the daily consumption of the metropolis. The inspectors visit the public markets, the wholesale magazines and retail stores. Last year 364,000 pounds of meat and fish were condemned, about 1,000,000 pounds of beans, peas,other similar vegetables and fruit and an immense quantity of mushrooms. In July, 1886, out of 100 samples of beer examined, 55 were reported adulterated. At the close of the year, the percentage of adulteration was found to have fallen to 7 per cent.; and out of 1,431 examinations made last year, only 39 samples showed adulteration. The improvement in the quality of the milk drunk in Paris has not been very considerable in the last year.

FOOD FOR PHOSPHORUS.

The editor of the *Retail Grocers' Advocate* amused himself in his last issue, explaining to his readers "what he eats." We have neither space nor stomach to rehearse the entire nauseous list of delicacies enumerated by him in his bill of fare, which includes seaworms—"trepangs"—an exceedingly ill-scented marine worm—and snails, to say nothing of ants and spiders. We have always known the editor of the *Retail Grocers' Advocate* to be possessed of mental attributes different from those of any other human being, but we never before clearly understood why that difference should be so radical and offensive.

THE CIGARETTE QUESTION.

Of course persons are always prepared to defend their pet vices—and correspondingly to denounce their special antipathies. The criticism of a correspondent in another column of this issue concerning the rebuke to the cigarette habit which we quoted recently from the *Journal of Commerce*, will be regarded as responsive or otherwise according to the prejudices of the reader. There is undoubtedly much truth on both sides of the question. But there can be but one opinion as to the perniciousness of cigarette smoking, or tobacco using in any shape, by boys, and it would be well if some means could be adopted for its repression by statutory provision.

WHAT MUST THE BUTTER BE?

Good butter must be at a premium in England judging from the following sarcastic complaint of a writer in the London *Tattler*: "Can any of my readers inform me what lard is? I have hitherto supposed it was purified pig's fat, but according to a public analyst it consists of olive oil, paraffine, starch, potatoes, chalk, plaster of Paris, caustic lime, and a host of other similar dainties. I shall be very glad if this can be confirmed, as I have long been anxious to find an agreeable substitute for the pig-wash sold now-a-days as butter."

To Harden Plaster of Paris.—To harden Plaster of Paris add 5 or 10 per cent. of hydraulic cement to the plaster before wetting. Five per cent. of finely ground sulphate of potassium will give even a quieter degree of hardness.

BEEF AS IT IS AND AS IT WAS.

WHY CHICAGO DRESSED BEEF IS SO POPULAR.

Hard common sense always wins. Many scientific enterprises which seem to the casual observer as only possible of accomplishment by scientists are simply the results of close observation and good practical knowledge. A good illustration of this may be found in the successful solution of the problem of furnishing fresh meat to all parts of the country and Europe. Only a few years ago the traveler on our railroads had abundant cause for complaint of the toughness and generally inferior character of the beef placed before him at railway eating saloons, and, in fact, everywhere excepting at the very best and highest priced hotels. Those who lived in the smaller cities and villages could very seldom obtain a nice piece of beef. Steaks were unknown luxuries excepting by those who could pay extravagant prices. All this has been changed now, and from one end of this great land to the other, and even in all the larger cities of Western Europe, first-class tender beef can be bought now at lower prices than were formerly paid for tough and tasteless masses of fibre. How was this brought about? Simply by the practical knowledge, shrewd enterprise and perseverance of a very plain common-sense butcher hailing from Watertown, Massachusetts, who believed that cattle should be killed and dressed near where they were bred, and in such large quantities that what was before considered as waste product could be profitably utilized instead of adding by its useless weight to the expense of freight. He calculated that beef dressed near the place of production could be carried to the market at much cheaper rates and in better condition than the live animal. Without wasting either time or money in scientific experiments he proceeded westward and with very limited capital commenced operations. The principle of refrigerators was known but was little understood. It needed the practical knowledge of the butcher to perfect it. Having obtained cars constructed on the plan that best corresponded with his views, this man at once put all his ideas in operation, and to-day we see the magnificent results in the large slaughter houses of Chicago, Omaha, Kansas City and St. Louis, in the numerous trains of beef cars on all our railroads and the dressed beef depots in every village, town and city of the country. This man is G. F. Swift, the head of the large Chicago firm of that name. In an interview with him some time ago he was asked as to the cause of his success which he modestly told in the following few but meaning words: "I have not had the advantage of a college education, but have learned that if a man carefully selects the best cattle suited to the purpose, kills and dresses them in the cleanest manner and sends the meat to market in dry cars at an even temperature, the public will buy it, and no matter what interested competitors may say against him or his meat, the taste of the meat and its fair price will continue to increase his custom." This tells the whole story. An inspection of these slaughter houses, which, by the way, are always open to the public and not kept barred against inspection as the New York shambles are, fully proves the exact truth of these statements. Healthy looking cattle, carefully rested and fed after their journey are killed in the quickest and least painful manner, all blood that can possibly be extracted is drained out, the carcass never allowed to touch the floor, all offal and debris instantly removed and worked up so as to avoid decomposition, the beef washed clean from any blood stains and all bruises cut out, is rapidly cooled and moved to a dry refrigerator of an even temperature of about 38 deg. Fahr., from where it is transferred to refrigerator cars of the same temperature to be sent to all parts of the country. One of the peculiarities of this slaughter house, or rather of these several slaughter houses, is the astounding cleanliness enforced on the employees as well as in the floors, posts and walls. As many men are kept employed washing and scrubbing these floors and walls as are at work in dressing the meat, and on none of these men is any uncleanness allowed, either in body or clothing. The general rule is that decomposition does not pay, and decomposition being produced by uncleanness, all uncleanness must be avoided. Thus has this great dressed beef industry been started, progressed and made a permanent success in the face of the bitterest and most unscrupulous opposition, the malignity of boycots, slanders and libel, the unjust discrimination in freights by railroad companies and the ignorant and misinformed talk of retailers, until to-day it has by the force of merit alone, nearly driven all local competition out of the market. What has been said of G. F. Swift applies as well to the other great house of P. D. Armour. These beef dressers, although having a community of interest on methods of business, have, nevertheless, a very lively competition constantly. Vieing with each other in pushing into new territory both for supplies and markets, quality is maintained and prices are restricted to a point where often the profit lies only in the value of the saved waste materials.

CONCERNING CIGARETTES.

BY ONE WHO HAS ROLLED AND SMOKED THEM FOR TWENTY YEARS.

That respectable fossil, the *Journal of Commerce* has been giving to some mildly amusing crank an opportunity to hide in its columns an expression of his personal dislike for cigarettes, and I don't know which surprises me most that the Analyst should have discovered his diatribe in that sepulchre, or that the Analyst has reprinted it. It really does not seem to have been worthy of resurrection. The crank in question deals in vituperative denunciation of the cigarette, but offers no intelligent arguments against proper indulgence in that dainty delight. He howls about its "noxious smoke," "foul offence," "vile odors," and "exhaled stench," calls it a "pernicious roll," and brands its use as a "baneful habit," "unwholesome, insalubrious, pernicious, and debasing." And all that is based simply upon his own ignorant predjudices, perverted taste and the alleged but improved "voice" of "our most eminent physicians and chemists." I could respect his ability, if not his judgment, were he able to give us something as splendid as King James' magnificent sentence respecting the users of tobacco and coffee. "They cannot wait until the smoke of the infernal regions surrounds them, but surround themselves with a smoke of their own making and drink a poison that God made black that it might bear the devil's color." But all he offers is mere words, empty and colorless, by comparison with that charming burst of fancy. As might be expected, he betrays himself as one who has an antipathy for tobacco and is possessed of the selfish illiberality of wishing to make all the rest of mankind subservient to his whims. He sighs for the general adoption of that now obsolete Boston ordinance prohibiting all smoking in the streets, and as he fears that is not to be hoped for, at least would have the Legislature enact a law "against the use of the cigarette in public." Get thee gone, Sirrah! "Dost thou think that, because thou art virtuous, there shall be no more cakes and ale."

Now, casting aside all this pharisaical humbug, what is there bad about cigarettes? Why, simply bad cigarettes. That is all. There is nothing bad about good cigarettes, and he who knows how to intelligently buy good tobacco and pure rice-straw paper, and with those materials roll his own cigarettes, can always have good ones, that will at least be no more injurious than cigars or pipes, and no more offensive to other persons than any other tobacco smoke would be. It is unfortunately true that most of the manufactured cigarettes contain poor tobacco that is dosed, doctored and drugged to give it ficticious flavor or, in some cases, narcotic strength; also, that a vast majority of them are rolled in a bad quality of paper, in part or wholly cotton. They not merely smell badly but actually stink, of course, and the smoker who habitually sucks in crude creosote from that sort of

paper must inevitably suffer the evil consequences. When the Hon. John Morrissey's son—a fine young man—died, it was widely published that he had been "killed by smoking cigarettes." But the story was not correctly told. He died of the inordinate smoking of Havana cigarettes rolled, as they always are, in thick, course, cotton paper, every leaf of which if burned without any tobacco in it, on a clean plate, will leave an ash as big as a full cigarette, and a large, deep brown stain of pyroligneous acid. It was the paper that was too much for his delicate constitution. You may burn a bunch of pure rice-straw paper and it will leave hardly any perceptible ash, no such stain, and will make no smell.

Of course it is bad for boys to smoke cigarettes or tobacco in any form. Its action upon the heart and the nervous system is altogether too powerful for them, and perhaps we would all be better without it. But so long as adults will smoke, there is no other way in which they can enjoy the indulgence so delicately, cleanly, perfectly and inoffensively as by the cigarette. Every boy who is caught smoking should be switched, as he should be for eating unwholesome food, and it might not be a bad idea to prohibit by law the sale of cigarettes to boys. But I do not see how any other force than public opinion can, with due regard for the personal liberty of the citizen, be brought to bear against the adult smokers of even bad cigarettes. To taboo all cigarettes by law, because the *Journal of Commerce* crank does not like them, would be establishing a bad precedent. We do not know at what next he might turn up his august nose. And the rest of us may have delicate olfactories, too. I am liable to make a vigorous kick against Frangipanni, and I have a friend who is thrown into a paroxysm of abhorrent rage by the smell of musk. May we hope for acts of the Legislature to abolish those perfumes?

Another count in the indictment that the crank individually finds against cigarettes is that their manufacturers have used vulgar and indecent pictures to advertise them. I heartily coincide in his denunciation of those vile pictures, and agree that the persons putting them forth should be severely punished for their offence against public decency; but, for the life of me, I cannot see how those pictures make the cigarettes any more offensive or unhealthful. One might as justly object to Mrs. Lydia Pinkham's medicine because he had taken offensive at the wood-cut portraits of that dear departed saint published in the advertising columns of the newspapers.

If a man is so far enfeebled in mind, or crippled of hands, or oppressed by laziness that he is incapable of rolling his own cigarettes, let him smoke cigars or pipes to his heart's content, and I shall say "peace be with him!" I have no right to make his doings my concern. Nor has any crank the right to make his doleful sound from the *Journal of Commerce* tomb in animadversions upon my very nice and proper little pet vice of smoking good cigarettes.

J. H. CONNELLY.

DOMESTIC DIETETICS.

SPECIALLY PREPARED, FROM PRACTICAL TESTS, FOR THE LADY READERS OF THE "AMERICAN ANALYST."

SEASONABLE FOOD.

November.

MEATS.—Beef, mutton, ham, kidneys, liver, venison, sausage.

GAME AND POULTRY.—Grouse, hare, pigeon, partridge, quail, chicken, duck, turkey, rabbit, goose.

FISH.—Bass, blackfish, bream, clams, cod, crabs, eels, carp, catfish, flounder, halibut, herring, lobster, mackerel, mussels, oysters, perch, porgie, prawn, rockfish, salmon, sturgeon, smelt, turtle, whitefish.

VEGETABLES.—Artichokes, beets, beans, broccoli, Brussels sprouts, cabbage, carrots, cauliflower, corn, cucumbers, egg plant, garlic, lettuce, onions, parsley, parsnips, potatoes, savoys, shallots, spinach, squash, tomatoes, turnips.

FRUIT.—Apples, bananas, grapes, oranges, pears, pineapples.

PRACTICAL RECIPES.

BOILED TURKEY.—Make a stuffing as follows: One-half pint grated bread crumbs, one-quarter pound butter, twenty-five large oysters, chopped; two tablespoonfuls cream, beaten yolks of three eggs, a little sweet marjoram. Stuff the turkey, dredge with flour, put in a large kettle and cover with cold water. Boil slowly for two or three hours, according to size of turkey. Serve with oyster sauce.

OYSTER SAUCE.—Save all the juice in opening the oysters; cut off the beards and put them to boil in the liquor, with a bit of mace and lemon peel. Put the oysters into cold water and drain them; strain the liquor; add to it the oysters just drained from the cold water, with a lump of butter rubbed in a little flour and enough milk to make the amount of sauce required. Put on the fire and let it boil a few moments, stirring constantly. Serve at once. A little squeeze of lemon is an improvement.

CHOWDER.—Four tablespoonfuls of onions fried with pork, one quart of boiled potatoes well mashed, one pound of thyme and one of summer savory, half a bottle of mushroom catsup, one bottle of old port or claret, half a nutmeg grated, a few cloves, mace and allspice, a six-pound codfish cut in slices three-quarters of an inch thick, twenty-five oysters, a little black pepper and three slices of lemon. The whole to be put in a kettle, covered with an inch of water, boiled for one hour and gently stirred.

SAUTEES POTATOES.—Peel and slice equally three cold, medium-sized boiled potatoes that are not too mealy nor too much cooked; put a piece of butter the size of an egg in a frying-pan on the fire; let it get very hot; add the potatoes, salt and pepper. A few minutes after take hold of the pan, and by a quick move turn the potatoes over without the use of a spoon; repeat this operation until the potatoes are nicely brown; add a little chopped parsley, and serve.

FORCE-MEAT FOR TURKEY AND CHICKEN.—Put in a bowl eight ounces of bread crumbs, two tablespoonfuls of finely chopped parsley, two tablespoonfuls of equal quantities of powdered thyme and marjoram, a suspicion of lemon peel grated, and the juice of half a lemon, a quarter of a nutmeg, and a teaspoonful of salt, one-sixth of one pepper. Mix in four ounces of softened butter, and bind with the yolks of two eggs. For a chicken, one-third of this quantity will be sufficient.

BUCKWHEAT CAKES.—Take one and one-half pints buckwheat flour, one handful Indian meal, one teaspoonful salt and three teaspoonfuls Horsford's baking powder: mix thoroughly while dry. Then add two tablespoonfuls molasses and cold water enough to make a thin batter. Do not add the molasses and water until ready to cook.

PICALILLL.—Take gherkins, sliced cucumber, button onions, cauliflowers broken in pieces, white cabbage cut in quarters, carrots sliced, three parts, French beans, samphire, nasturtiums, radishes sliced, and mingle them together. Salt them and let them stand for three or four days. Meanwhile, prepare the following:

Strong vinegar	1 gallon.
Ginger (bruised)	4 ounces.
Pepper (whole white)	2 ounces.
Allspice	2 ounces.
Chillies (bruised)	½ ounce.
Turmeric	4 ounces.
Mustard	1 pound.
Eschalots	½ pound.
Garlic	1 ounce.
Baysalt	1 pound.

The vinegar, spice and the other ingredients, excepting the mustard, must boil half an hour; then strain it into a pan. Put the mustard into a large basin, with a little vinegar; mix it quite free from lumps, then add more. When well mixed, put it into the vinegar just strained off. When the mixture is quite cold, put the pickles into a large pan; pour the liquor over them; stir them repeatedly, so as to mix them all; finally put them into a jar, and tie them over with a bladder, and afterwards with leather.

FEATHER CAKE.—Take two cups sugar, one-half cup butter, two-thirds of a cup milk, three cups flour, three eggs and three teaspoonfuls Horsford's baking powder; flavor with lemon or vanilla. This is a very nice, plain cake.

COMPOTE OF QUINCES.—Take six quinces, cut them in halves, core, scald and then pare them neatly. Put some clear syrup into a preserving pan with the juice of a lemon. When hot, add the quinces and boil them together; drain the fruit, arrange it in a dish, leave the syrup to thicken, then pour it over the quinces.

BANANAS AND ORANGES.—Slice three or four firm ripe bananas into thin pieces; cut up an equal number of juicy oranges; mix the fruits lightly, sprinkle with powdered sugar and serve at once.

SOAP.

A POPULAR AND SCIENTIFIC EXPOSITION OF THE SUBJECT.

The familiar substance soap is, chemically speaking, a true salt, or combination of an acid with a base. The acids which form soap are obtained from fats and oils, and are known as fatty acids. A great variety of animal and vegetable substances are used in soap-making, such as palm oil, cocoanut oil, olive oil, tallow, lard, and the fat of fishes and other animals. The chemical reaction is the same, however, in all cases. The fatty acids, palmitic, stearic, oleic, etc., exist in the fats, combined with glycerine as a base, forming the substances known as palmitine, stearine, or oleine. Tallow, for instance, is a mixture of stearine, palmitine and oleine. When these are melted, and boiled with a caustic alkali, such as sodic hydrate, glycerine is set free, and palmitate of soda, or soap, is formed. The reactions expressed by symbols is as follows:

$$\underset{\text{Palmitine.}}{(C_{16}H_{31}O_2)_3C_3H_5} + 3\,\underset{\text{Sodic hydrate.}}{NaOH} = \underset{\text{Sodic palmitate.}}{(C_{16}H_{31}O_2Na)_3} + \underset{\text{Glycerine.}}{C_3H_8O_3}.$$

In the above reaction hard soap is formed; but if potash had been used instead of soda, a jelly-like mass, known as soft soap, would have resulted, containing the glycerine and impurities present in the substances used. Chevreul, the venerable French chemist, now in his one hundred and third year, was the first to study and explain this peculiar reaction, commonly known as saponification. It is to be noted that the caustic alkalies, or hydrates, must be used in this process, as the reaction does not occur with the alkaline carbonates which are more commonly met with. In wood ashes the alkali occurs as carbonate, and the lye must be treated with quick-lime to remove the carbonic acid. Carbonate of soda is often added to soap for the purpose of increasing its cleansing power; but it does not enter into chemical combination, and is an undesirable addition. It is never found in the best soaps. Resin is a common constituent of the cheaper grades of soap, and forms a chemical combination with alkalies. It is not a true soap, however, and is of little value, except to the manufacturer by increasing the weight of the product. The practical operation of soap-boiling is one requiring considerable skill. The alkali and fats are boiled together for several hours, forming a mass known as soap glue. Common salt is then added, which precipitates the soap from the water, glycerine, and impurities. The soap rises to the top of the mother liquor, which is drawn off by a tap at the bottom of the kettle. This process is sometimes repeated, and the hot soap is then ladled out into wooden frames, where it is allowed to harden into a solid cake, which is

afterwards cut up into bars of the desired size by means of a wire. Soap, when freshly made, always contains a large amount of water, which greatly increases the weight, besides causing it to dissolve much more rapidly. For these reasons the manufacturers do not take much pains to lessen the percentage of moisture, and it is much more economical to use old soap that has been well dried. Castile soap is extensively manufactured in Southern Europe from olive oil. It varies in color from pure white to green. The familiar mottled appearance is caused by mixing copperas with it, which is changed to sulphide of iron by the sodic sulphide present in the lye. Toilet soap is simply ordinary soap, colored, perfumed, and moulded into fancifully shaped cakes. A poor quality of soap is often used, and its deficiencies masked by the color and odor. A good castile soap is purer and better in every respect for toilet use, and the special brands of soap so extensively advertised by certain American manufacturers, are, as far as our experience goes, unexceptionable in purity and efficiency. Transparent soap is made by dissolving ordinary hard soap in alcohol, and allowing it to harden in moulds. It is by this means separated from impurities, and a very good and attractive-looking article results. The alcohol is recovered by distilling and condensing, and used over again. The fatty acids also unite with lime and other bases, forming insoluble soaps, mostly of little importance. The lime soap is formed when ordinary soap is dissolved in hard water, containing an excess of that base. Soaps of lead, mercury, and iron are used to a small extent in medicine; but the only important compounds of this class are those of soda and potash. The cause of the cleansing power of soap is even yet somewhat uncertain. According to Chevreul, the soap is decomposed by the water, setting free double fat acid salts and alkali. The alkali removes the dirt, which is taken up by the fat acid salts, and remains suspended in the lather. In some respects this explanation is not quite satisfactory; but whatever may be the cause of the peculiar properties of soap, it is so extensively used, and of so much importance in the daily affairs of life, that the amount consumed by a nation may be taken as a measure of its advance in civilization.—*Popular Science November News.*

REVIEWS OF NEW BOOKS.

A Manual of Dietetics for Physicians, Mothers and Nurses. By W. B. Prichard, M. D., Dietetic Publishing Co., New York.

The medical profession, and the public generally will be interested in a book recently published by Dr. W. Prichard, of New York, entitled, "A Manual of Dietetics for Infants and Invalids." This book will be found a compendium of very useful information and instruction upon the management and feeding of infants and the selection of food for the sick. The importance of proper food in its effect upon the progress of any illness has long been recognized, but it is only within the past few years that any definite effort has been made to systematize the subject from a scientific and practical standpoint. Dr. Prichard in his Manual has taken up each disease separately, and has carefully and elaborately outlined the diet most appropriate in each affection, basing the selection of food upon the effects of the disease upon the system and the special organs and functions involved. It is a book that should be found in every family. The vexatious question, "What shall I give my patient to eat?" need not prove a source of annoyance to the physician or nurse any longer. With your Manual to refer to, you have a reliable and convenient source of information constantly at hand. The book is a handsome volume of nearly 100 pages, neatly and substantially bound in cloth.

Big Carpet.—The largest carpet in the world has been on exhibition at the Cincinnati Exposition. It contains 2,700 square yards.

A Heavy Weight.—Hanson Craig, of Kentucky, is probably the heaviest man in the world. His weight is given at 792 pounds, and it requires 37 yards of cloth to make him a suit. He is 6 feet 4½ inches in height, is 32 years old and weighed 11 pounds at birth. When two years old he took a $1,000 prize in New York, tipping the beam at 206 pounds at that time. His father weighed 115 pounds and his mother 122.

Transparent Watch.—A novel watch is being manufactured by the Waltham Watch Company. The case plates are of Brazilian pebble, or rock crystal. Holes are drilled in the crystal plates for the various screws and fittings; the pivots are set in rubies and sapphires, and the plates are held apart by sapphire pillars. The dial is a skeleton of gold. Diamonds mark the hours and rubies the minutes. The watch is of course transparent.

The Next Census.—The census for 1890, preparations for which are already being made, promises to show in the United States a population of more than 70,000,000. The population in 1880, according to the census of that year, was 50,155,783 persons, of whom 43,475,840 were native and 6,679,943 foreign born. The natives had increased 10,484,698 from the figures of 1870, which were 32,991,142, or 31.5 per cent. The foreign element had gained more slowly, bringing the percentage for the entire population down to 30 per cent. The same rate of increase applied to the census of 1880 will give an increase of 15,046,639 persons during ten years ending in 1890.

Oil Carried by Rockets.—An improved method of distributing oil on the waters has been patented in Germany. It consists of a rocket to which is attached a cylinder filled with oil. It is said that the rocket can be fired with accuracy from the ship, and that when it explodes the oil is scattered just where it is wanted. Several interesting experiments have recently been made between Bremen and New York. In one the rocket was fired to a distance of 1,500 feet and less distances. By the explosion of five rockets at a distance of 1,200 to 1,500 feet from the ship a space of 1,500 to 2,000 square feet of water was covered with oil, and the waves were at once smoothed. The rocket was fired 900 feet against a gale. The importance of the invention to deep-water sailors consists in the certainty of explosion of rocket at a sufficient distance to leave the vessel in calm water during a gale.

The Coming Propeller.—Steamboat men say that the sidewheel ferry-boat will soon be a thing of the past, and boats with propellers at each end will supersede them. The new idea is indorsed by many shipbuilders, practical architects and marine engineers. The important advantage of the propeller is that it takes less consumption of fuel and can be easier handled, besides costing less. The shaft will run through the boat from end to end, with an average-size propeller at bow and stern. The first boat of this pattern has been designed by J. Shields Wilson, and is being built at Newburgh, N. Y. It will be 200 feet long, have triple expansion engines with cylinders 18½, 27 and 12 inches in diameter, and improved steel boilers. The screw on the stern of the boat will push the vessel ahead, while the one at the bow will pull. When a stop is required, the reversal of the propellers will check the boat very quickly. The new boat is looked upon with great interest by those interested in maritime affairs.

ADVICE TO WOMEN.

One of the most beautiful features of social life, whether civilized or savage, is the respect and sympathy shown by all classes to women who are entering that most important state, motherhood. The beauty of the fact lies in its necessity, for at no other stage of life does a woman require so much aid and advice. The tendency of society to veil everything pertaining to birth but increases the evil. As a consequence, an artificial mystery has been created into which people dare not penetrate. No good ever comes from concealing the truth. The wives and mothers not only of the United States, but of those portions of Europe where the same ignorance prevails, suffer daily from the false and imposed ignorance in which they live. The husbands and fathers know no more, if as much, as their women. Only when disease shows itself, is the physician or the trained nurse called in to restore the health necessary to both mother and child. Even when this is done, the ignorance remains comparatively unchanged. The condition is the very opposite of what ought to be. Every wife and mother should be perfectly familiar with those laws upon which depend not only her own welfare, but also that of their child, which is to represent her in another generation. These laws are simplicity itself. On account of the ignorance so general, a few words may be of the greatest value to the women of the land. In the first place, a prospective mother should indulge freely in sunshine and fresh air, and, moderately, in light exercise. She should, as far as possible, walk or ride a reasonable distance, especially when the weather is fair. What is reasonable depends upon the individual. One person can cover five miles with less fatigue than another one mile. One woman can stroll around for hours with benefit when another becomes exhausted. The measure in each case is simply the amount of exercise which can be performed without producing weariness. In the second place, she should avoid growing fat. It is a common but false kindness to pamper the appetite, under these circumstances. A stout woman undergoes more pain and trouble in childbirth than does a thin one. If any change is to be made, it is far better to "train down fine" than to "train up in weight." A simple, but generous diet, in which fruits and vegetables are large elements, is the only one recommended by science. In the third place, she should avoid all shocks. Women, especially those who are delicate and refined, possess a far more sensitive organization than do men. What to an average father is a playful tap, a little jump, or a harmless pleasantry, becomes to a young mother a painful blow, an exhausting feat, or an irritating occurrence. Her life should be as calm, happy, and uneventful as love and forethought can make. In the fourth place, and of the greatest importance, she should keep her blood as pure as medical and chemical science will allow. If she obeys this law, childbirth loses its terrors and a happy mother and a perfect child are the results. If not, both she and her offspring run the risk of countless dangers and diseases. It is needless to take a course of medicine; all that is necessary to be done is accomplished by the use of Ayer's Sarsaparilla. This admirable and well known preparation acts with equal beneficence upon mother and child, dispelling and expelling all impurities of the blood, stimulating and developing the vital functions, and creating that health and strength which are the highest good in life.

BUSINESS NOTES.

THE ATTACK UPON CARNRICK'S SOLUBLE FOOD REFUTED BY REED & CARNRICK.

Reed & Carnrick have long been known as manufacturers of prepared foods and digestive products. Two of their more recent products are known as "Carnrick's Soluble Food" and "Liquid Peptonoids." The former has been claimed *from its inception* to be composed of milk solids and roasted flour. The especial claim has always been made for this preparation that the milk has been subjected to the action of a pancreatic ferment thus rendering a large portion of the casein perfectly soluble and the remaining undigested portion similar in characteristics to the casein of human milk, and that the flour having been roasted by a special process, the starch therein has been converted into dextrine and soluble starch. The addition of milk sugar to this preparation was promptly announced, this addition being made for the dual purpose of, firstly, sweetening the Food, thereby making it more acceptable to children; and secondly, reducing the albuminoid value, which was considered a little too high. An analysis made by Professor Stutzer in 1884 has been continually published, which gives the albuminoid strength as 18.22 and the quantity of fat as 5 per cent. This analysis has been sent to every physician in the United States several times, and has always been printed on our circular. Reed & Carnrick have often attempted to increase the quantity of fat in the above Food, but it was found impossible, for when a larger percentage was used the Food would not keep. It will be observed from Professor Stutzer's analysis that Soluble Food contains a larger percentage of fat than any infant food examined. It was suggested by Dr. Earle, in a paper read before the section of diseases of children at the last meeting of the American Medical Association, that the addition of a small quantity of cream would be advisable, and this suggestion has been promptly embodied in the circulars referring to this preparation, it being the object of the manufacturers to

adopt every useful suggestion, and to produce the best possible substitute for human milk. The latter preparation, Liquid Peptonoids, was originally designed as a highly nutritious preparation, containing about 10 per cent. of peptone; but since we discovered the impossibility of presenting in liquid form a stable preparation of high albuminoid value, we have never made this claim. (See Professor Breneman's report below.) The nutritive nitrogenous value of Liquid Peptonoids as now prepared is about the same as cow's milk and about double that of human milk. Its especial value in this respect consists in its nutritive constituents, being in the form of a peptone and ready for immediate assimilation, and its palatability is such that it can be taken and retained when other forms of food are rejected. We desire, however, to add that the value of Liquid Peptonoids does not simply depend upon its nutritive properties. It is an active digestant and an efficient peptogen, stimulating natural gastric secretions. It has also recently been used with great success in dissolving the false membrane in diptheria. It is not the purpose of this circular to enter into a discussion of the value of these preparations. The experience of the Medical Profession with them will be sufficient to decide upon their merits.

CUTTER WHISKEY.

We have had standing on the galley a long article on this subject, but the crowded condition of our columns has prevented its publication. We therefore take this opportunity to say briefly that the sales of this well and favorably known brand are constantly increasing, attesting the fact that the public appreciates goods which are honestly kept up to the high standard they have always maintained. To do this seems much easier than it really is, because great experience, judgment, a fine taste and unlimited capital are required. Fortunately all these requisites are possessed by Messrs. C. P. Mooreman & Co., of Louisville, the owners of the brand, hence the result in their unprecedented success.

A PRACTICAL PROVERB.

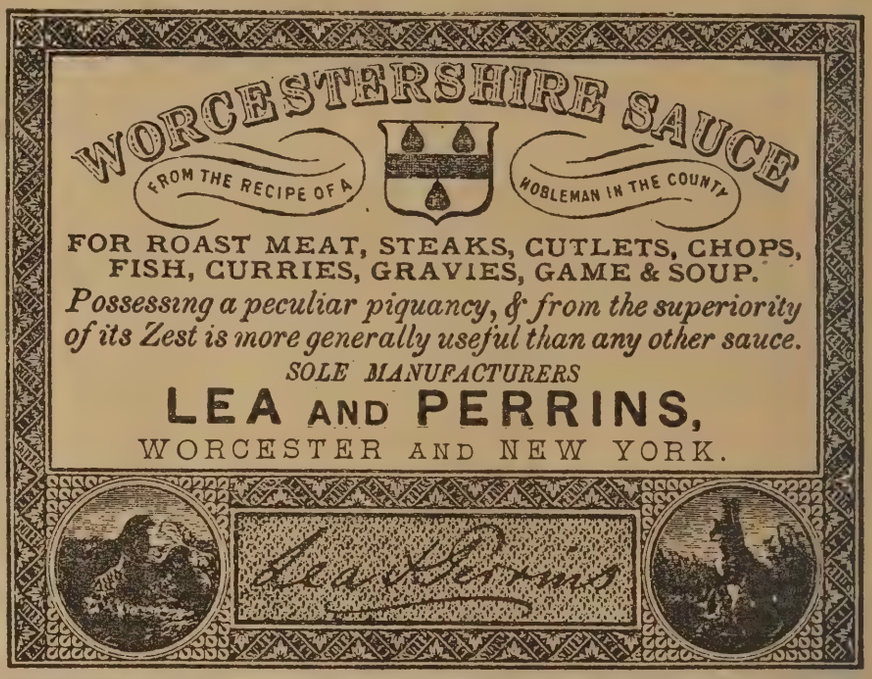
"At My Finger's Ends."—One of Esterbrook's delightful, easy writing pens.

HORSEFORD'S ACID PHOSPHATE.

A Good Tonic.—Dr. R. Williams, LeRoy, N. Y., says: "It is a good general tonic and worthy of trial.

COUNTERFEIT LABELS.

Manufacturers who have been annoyed by imitations of their labels and trade-marks, will appreciate the difficulties encountered by firms, who having spent large amounts of money in introducing an article in the market, find themselves suddenly confronted by cheap imitations of their goods, under labels closely similating the genuine. Perhaps no firm has suffered more from this cause than Lea & Perrins, the manufacturers of the celebrated Worcestershire Sauce. They have at last been compelled to publish a fac-similie of their label to make the public familiar with its appearance, and thus prevent fraud. The labels are printed in black ink on red paper. The well-known firm of John Duncans' Sons are the sole agents for this Sauce in the United States.



Sold Wholesale by Crosse & Blackwell, and the principal Dealers in Oilman's Stores, London; John Duncan's Sons, New York; Cross & Co., San Francisco; Montefiore, Joseph & Co., Sydney, Virgoe, Son & Co., and James Henty & Co., Melbourne; Martin & Murch, Adelaide; E. Pearce, Wellington; Roberton & Co., Auckland; Matheson's Agency, Christchurch; McPherson & Co., Invercargill; Douglas & Co., and Urquhart & Co., Montreal.

Entered according to Act of Congress, in the year 1874, by John Duncan's Sons, New York, in the office of the Librarian of Congress at Washington.

LOOK OUT for Imitations and Substitutes

OF

Horsford's

ACID PHOSPHATE.

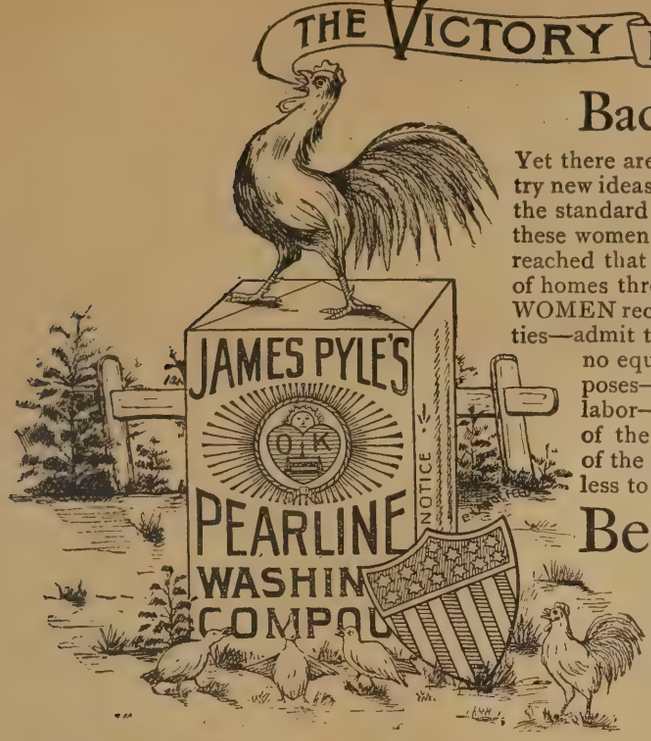
A variety of imitations and substitutes of this standard preparation have appeared under the name "Acid Phosphate," or a similar title, all of which differ materially from the genuine article.

Be sure the name **"HORSFORD'S"** is on the label. No other genuine.

N. D. ARNOLD, Treas.

Providence, R. I.

Rumford Chemical Works.



Bad Policy to Crow

Yet there are many conservative women who never try new ideas; they wait until an article has become the standard in its line—"until it can crow." To these women we want to say that PEARLINE has reached that point; it is now a necessity in millions of homes throughout the land. INTELLIGENT WOMEN recognize its wonderful cleansing properties—admit that it is the modern soap—that it has no equal for ALL washing and cleaning purposes—that it effects a saving of time and labor—that by doing away with the worst of the rubbing it does away with the worst of the wear, and besides is absolutely harmless to fabric or hands.

Beware Peddlers and some unscrupulous grocers are offering imitations which they claim to be Pearline, or "the same as Pearline." IT'S FALSE—they are not, and besides are dangerous. PEARLINE is never peddled, but sold by all good grocers.

Manufactured only by JAMES PYLE, New York.

ESTABLISHED 1823.

ALEX. YOUNG CO., Limited,

DISTILLERS OF

Y. P. M. WHISKIES.

DISTILLERY, - - - Nos. 408, 410, 412 and 414 South Street.
MALT HOUSE, - Nos. 416, 418, 420, 422 and 424 South Street.
STORE, - - - - - - - - - - No. 700 Passyunk Avenue.

PHILADELPHIA, PA.

New York Office, - 78 Wall Street.

FOR SALE BY

PARK & TILFORD, and ACKER, MERRALL & CONDIT.

CALIFORNIA

Fine Table Wines

From our Celebrated Orleans Vineyard.

Producers of the

ECLIPSE CHAMPAGNE,

530 Washington St. SAN FRANCISCO.

Agents. PARK & TILFORD, New York, C. JEVNE & CO., - - Chicago,

LEA & PERRINS' SAUCE.

Lea & Perrins', the original and genuine Worcestershire Sauce, has been before the public over a half a century. Like all popular favorites it has long been the standard of comparison and the pattern for counterfeiters who not being able to imitate its excellence offer to the public imitations in bottling, labels and style of putting up. They dare not counterfeit the signature of Lea & Perrins which is on the red label of every genuine bottle, and of which this is a facsimile.

Lea & Perrins

To be sure of obtaining the genuine article, see that the above signature is on the label.

A SET BACK TO ALL PREVIOUS INVENTION.

EDUCATION Quick vs. Old System **Dead.** Education almost by machine process. As mind is above matter so is this method (simply by seven words) above all previous invention of whatever kind. **A Wherewithal Book, $1.00 Form.**

We **guarantee** you will be more than **satisfied.**

If you want this method remit $1 00 by Registered Letter or send Check and receive by mail a great **possibility** from the sole originators and proprietors of the **New Education,**

WHEREWITHAL COMPANY, Philadelphia, Pa.

YOU CANNOT OBTAIN THESE GOODS



Excepting by being measured at one of our stores or sending your order by mail. The **reputation** of these justly celebrated goods is now so widely known in every State in the Union that we have only to keep plainly in the public view, directions how to obtain the

FAMOUS CUSTOM-MADE

PLYMOUTH ROCK $3 PANTS.

Suits cut to order $13.25.

Overcoats cut to order $12.00.

1. "Only a postal card" sent to our Boston store, **provided you MENTION THIS PAPER,** brings by return mail 20 samples cloth to select from, self-measurement blanks and a linen tape measure. 2. But *if you have not time* to wait for samples, tell us about the color preferred, with **waist, inside leg** and **hip** measures, remit $3, together with 35 cts. to cover cost of expressage or postage, and we will forward the goods prepaid to any address in the U. S., guaranteeing safe delivery and entire satisfaction or money refunded.

ONLY A POSTAL CARD

Remember that for any cause we refund money at buyer's request upon return of goods, or make alterations on new garments **free of extra charge.**

Address all mail to **Boston Store.**

PLYMOUTH ROCK PANTS CO.,
18 Summer Street, Boston, Mass.;
285 Broadway, New York;
Burnside Building, Worcester, Mass.

A letter from the American Express Co. (capital $20,000,000) about our standing and business methods may be obtained by writing to them at Boston.

FACIAL BLEMISHES.



The Largest Establishment in the World for their Treatment. Facial Development, Hair and Scalp, Superfluous Hair, Birth Marks, Moles, Warts, Moth, Freckles, Wrinkles, Red Nose, Acne, Pimples, Black Heads, Scars, Pitting, etc., and their treatment. Send 10 cts. for book of 128 pages, treating on 25 skin imperfections, 36th edition revised and illustrated.

Dr. JOHN H. WOODBURY,
210 West 42d St., New York City, N.Y.

Inventor of Facial Appliances, Springs, etc. Six Parlors; three for Ladies. Established 1870.

Ask Grocers for our Patent Barley **CRYSTALS,** a new, unrivalled **Cereal Food,** for Breakfast Tea & Dessert. If not sold there, write us for free samples. **GLUTEN FLOUR** and **SPECIAL DIABETIC FOOD** are invaluable waste-repairing flours for **Dyspepsia, Diabetes, Debility & Children's Food.** No bran; mainly free from starch. For all family uses nothing equals our **HEALTH FLOUR.** Send for circular offering 4 lbs. free.

FARWELL & RHINES, Props., Watertown, N.Y

YELLOWSTONE NATIONAL PARK, PACIFIC COAST AND ALASKA.

The Yellowstone Park is unquestionably attracting more attention at the present time, as a tourist resort, than any other place on the face of the earth. This spot is reached by rail only by the Northern Pacific Railroad, the famous dining-car line to the Pacific Coast, the only one of the transcontinental lines running dining cars of any description whatever. A book ticket will be sold at the Eastern terminals of the Northern Pacific for $110, including rail and stage transportation, meals on dining cars, Pullman and five day's accommodations south of Livingston in the Park.

The Alaska tour is also one that is attracting wide attention. The rates and facilities offered for making this trip are better, via the Northern Pacific Railroad, than by any other line. The attractions offered *en route* via the Northern Pacific, such as the ride through the Lake Park region of Minnesota, by the great wheat fields of Dakota, along the Yellowstone River and Clark's Fork of the Columbia, through the famous Spokane Falls region, over the Cascade Range, by the Palisades of the Columbia; Puget Sound, etc., together with the superior accommodations offered, make a trip by this route especially enjoyable. By writing Charles S. Fee, General Passenger Agent, M. P. R. R., St. Paul, Minn., you will receive copy of "Wonderland" and other books descriptive of the Yellowstone Park, Alaska and the country in general traversed by the "Dining Car and Yellowstone Park route."

COLDEN'S LIQUID BEEF TONIC.

ORIGINAL LABEL: "Colden's Liebig's Liquid Extract of Beef and Tonic Invigorator."

AN INVALUABLE AID IN THE TREATMENT OF ALL CASES OF DEBILITY.

Established 15 Years. Endorsed by Scores of Physicians. Essentially Different from all other Beef Tonics. Beware of Imitations.

COLDEN'S LIQUID BEEF TONIC consists of the Extract of Beef (by Baron Liebig's process), spirit rendered non-injurious to the most delicate stomach by extraction of Fusel Oil, soluble Citrate of Iron, Cinchona, Gentian and simple aromatics. An official analysis of this preparation by the eminent chemist ARTHUR HILL HASSALL, M. D., F. R. S., and an endorsement by SIR ERASMUS WILSON, F. R. S., is printed on the label of each bottle.

Its Range of Action Embraces all Cases of Debility.

By the urgent request of several eminent members of the medical profession, I have added to each wineglassful of this preparation two grains of SOLUBLE CITRATE OF IRON, and which is designated on the label as "No. 1," while the same preparation, without Iron, is designated on the label as "No 2."

It acts directly on the sentient gastric nerves, stimulating the follicles to secretion and gives to weakened individuals that first pre-requisite to an improvement, an appetite.

I will, upon applica'ion, send a sample bottle of Colden's Liquid Beef Tonic to any physician in regular standing. Please ask your Dispensing Druggist (if he has not already a supply) to order it. In prescribing this preparation physicians should be particular to mention "COLDEN'S" viz: "EXT. CARNIS. FL. COMP. (COLDEN). It is put up in pint bottles and can be had of Wholesale and Retail Druggists generally throughout the United States.

C. N. CRITTENTON, Sole Agent,
115 Fulton Street, N. Y.

Please Mention the AMERICAN ANALYST.

HORTON, CATO & CO.'S



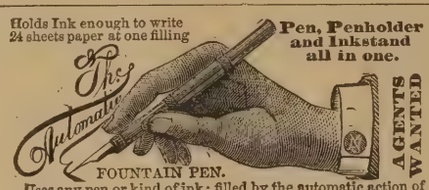
"ROYAL" SALAD DRESSING.

The best prepared Dressing, always fresh, does not turn oily, rancid or decompose as other dressings of a similar nature.

"ROYAL" WORCESTERSHIRE SAUCE,

The Peer of American Product.

HORTON, CATO & CO.,
SOLE PROPRIETORS AND MANUFACTURERS,
DETROIT, MICH.



Uses any pen or kind of ink; filled by the automatic action of India-rubber reservoirs; feeds itself by the pressure of writing; carries in the pocket safely; will not leak; finely made and finished in nickel-plate; superior to a $2 Stylographic pen; sells with a rush. Samples, postpaid, **25 cents.** Address,
G. H. W. BATES & CO., 125 MILK ST., BOSTON, MASS.



KEITH'S
CON. TINC. AVENA SATIVA

(FROM COMMON OATS.)

WITHOUT ADMIXTURE OF ANY KIND.

A Powerful Nerve Stimulant, Tonic, Etc.

WAS FIRST offered to the medical profession by B. KEITH & Co., in 1881, as a remedy to be employed in the treatment of

Paralysis, Epilepsy, St. Vitus' Dance, the Morphia or Opium Habit, Chloral and Tobacco Habits, Sleeplessness, Nervous Debility and Exhaustion, Neuralgia, Alcoholism Painful and Deficient Menstruation, Headache, Hysteria, Impotency, Convulsions and Prostration from fainting, and in the Convalescent stage of all Acute Diseases.

DOSE.—From ten to thirty drops, or more, as often as may be indicated to meet the urgency of the case. Administer in hot water when quick action is desired.

AN OVERDOSE CAUSES PAIN AT BASE OF BRAIN.

——WE MAKE ONE QUALITY ONLY.——

Price,
2 oz., 45c.; 4 oz., 75c.; 8 oz., $1.35; 16 oz., $2.50

B. KEITH & CO.,
75 William Street, N. Y.

ON THE USE OF PURGATIVES.

BY CHARLES A. HOFF, M. D., ST. LOUIS, MO.

Of all preparations contained within the *pharmacopœia*, there are none, apparently, held in higher esteem by mankind than that class of medicines, commonly known as purgatives. The busy practitioner confidently prescribes them with variable frequency, singly and combined, from the date of the writing of his very first prescription to that of his last; and the corner druggist rarely sees a day pass over his head on which he does not greet the customer who has called around to get "something to act upon his bowels." Indeed, the inevitable purgative awaits the tiny baby screaming in its first attack of colic; it is resorted to by the invalid weighted down with years of suffering and disease; and it is by no means despised by the individual in robust health, when assailed by the various petty ills, which even the most vigorous seldom entirely escape.

Notwithstanding the fact that purgatives are so generally prescribed by the physician, and so frequently resorted to without advice by the patient, they are not altogether incapable of doing harm. As everybody knows, the habit of purging the system repeatedly with salines, cholagogues, hydragogues, or drastics, is a most pernicious one; and the physician who fails to exercise a proper care, both in the selection and the administration of cathartics will sooner or later bankrupt the health of his patients as well as his own hard earned reputation.

Constipation is a complication of so many disorders, a symptom of so many diseases that its treatment in different cases depends upon very different considerations. For a simple, ordinary attack, the average doctor has been accustomed to use a simple purge, such as castor oil, sulphate of magnesia, rhubarb, senna, aloes, colocynth, blue pills, etc.; yet in none of these, can it be truly said, has there been found all that could be wished for, even in so simple a matter as a laxative. Where can we find the physician who has not been vexed and annoyed at the complaints of his patients against the purgative medicines he has been accustomed to prescribe. Some people there are who can not or will not swallow pills; many object to the nauseating castor oil; not a few oppose the use of salines since they are disagreeable both in taste and effect; many look upon all resinous cathartics as objectionable on account of their so called heating properties; aloes is objected to in pills and especially in pregnancy; elaterium is said to be excessively harsh and severe, croton oil is known to be dangerous; podophyllin causes an undue amount of griping; blue mass is avoided on general principles; and so on to the end of the chapter.

Fortunately, however, the physician of the present need no longer be placed in a dilemma when called upon to prescribe a preparation free from the faults enumerated in connection with ordinary purgatives. The pharmacist has bravely come to his aid with a formula of incomparable excellence; and this preparation, a combination of "manna, purified cathartic acid and fruit juice," although but recently brought to the notice of the medical world, is, nevertheless, already regarded as a most valuable addition to the resources of medicine.

The happy thought that suggested the combination known as the Rio Chemical Co.'s Acid Mannate justly challenges unlimited admiration and esteem, and has thus far evoked from the profession an almost universal verdict of commendation and praise. Prompt, mild and certain in its action, Acid Mannate may well be considered an ideal remedy in the constipation of pregnancy. Being pleasant to the taste, and continuing its good work without increased dosage, it is pre-eminently adapted to cases of habitual constipation. Indeed, in its wide range of adaptability as an aperient medicine it is impossible to exaggerate its importance, or allude either directly or indirectly to the vast variety of its beneficial, therapeutical properties.

The importance of laxatives is probably nowhere appreciated so much as in the constipation of pregnancy; and it is to this fact, no doubt, more than to any other, that Acid Mannate owes its great popularity and fame among remedial agents. The testimony of thousands of honorable medical gentlemen leading us to believe that, through the beneficent effect of this same elegant formula, constipation need not hereafter, as in the past, be regarded as one of the most troublesome attendants upon gestation. Moreover, the atrocious female pill of unknown composition but of dire effect, which has deluged the drug market for ages, we may consider as having had its day; and it is to be hoped that, since the physician is now in possession of a purgative especially suited to the period of gestation, female life will be less frequently harassed by the ails and aches said to be peculiar to the sex; and that miscarriages, displacements, granular erosions, congestions, headaches, dyspeptic and hypochondriacal attacks, and the whole long train of aches, pains and nervous ills will grow less familiar to the medical profession in the same ratio that the physician increases his familiarity with the actions of Acid Mannate.

A full sized bottle of Acid Mannate will be sent free to any Physician who desires to test it, if he will pay the express charges and mention this Journal, on application to the

RIO CHEMICAL CO.,
St. Louis, Mo.

J. HENRY HENTZ. J. P. ROBINETT. J. HENRY HENTZ, Jr.

ESTABLISHED 1793.

WHITE, HENTZ & CO.,

SOLE PROPRIETORS OF

Trimble and Pennsylvania Monogram Whiskies.

222 and 224 NORTH SECOND ST., PHILADELPHIA.

D. LIEBER, 17 South William St., New York. Col. H. A. SELIGSON, 1200 Pennsylvania Ave., Washington, D. C.

NATRONA BI-CARBONATE OF SODA.

(ABSOLUTELY PURE.)



The nature of the raw material from which NATRONA BI-CARBONATE OF SODA is made—viz., kryolith, a mineral containing *pure sodium*—insures a purity and uniformity of product which cannot be obtained from any other known material. In making BI-CARB. SODA from any other raw material, the use of sulphuric acid is a necessity, but none is used in any part of the process of making NATRONA BI-CARB.; hence its entire freedom from the slightest trace of arsenic, which is always present in ordinary soda. Its absolute purity and entire freedom from all traces of *sulphate of soda*, common salt and other impurities, render NATRONA BI-CARB. NEARLY TASTELESS, and being bolted through the finest bolting-cloth, insures the finest stage of division.

To these indisputable facts the attention of CONSUMERS of soda is specially called. They are IMPORTANT, and should influence both those who use and those who sell soda, to buy and sell NONE BUT THE BEST.

The NATRONA BI-CARB. Soda is kept in stock by almost every wholesale druggist and grocer throughout the United States, of whom it may be ordered.

Natrona Bi-Carb. Soda is unequaled by any other brand of English or American Manufacture.

PENNA. SALT MANUFACTURING CO.,

NATRONA CHEMICAL WORKS. PHILADELPHIA, PA.

ALTHENE SKIN SOAP

An absolutely pure and perfect soap for all purposes of the toilet, nursery, bath or sick-room. Has the approval of leading chemists and physicians, and is recommended by all who have used it. Price 25 cts. a cake, or 65 cts. for a box of three. Can be obtained of the retail druggists or from

J. W. CAMPION & CO., 916 Filbert Street,

PHILADELPHIA.

THE

VIBURNUM COMPOUND

OF

DR. HAYDEN,

THE STANDARD IN

FEMALE DISORDERS.

Employed in the leading Hospitals, and prescribed daily by the most eminent Gynæcologists. ***Five Thousand Physicians*** have given their testimonials for ***HAYDEN'S VIBURNUM COMPOUND.***

DISPENSED BY ALL APOTHECARIES.

ANALYZE "MONON" Resolutions!?

Whereas, The Monon Route wishes to make known to the world that it has the finest system of Pullman Buffet Sleepers and Chair Cars, running between Chicago and Louisville, or Chicago, Indianapolis and Cincinnati;

And Whereas, This makes it in fact the double connecting link of Pullman travel between the winter cities of Florida and the northern summer cities; then

BE IT RESOLVED, That, before starting on a trip, be sure and address E. O. McCormick, Gen'l Pass. Agent, 185 Dearborn Street., Chicago, for rates, etc.

GOOD AGENTS wanted to solicit subscriptions for the AMERICAN ANALYST. Apply 19 Park Place, N. Y.

Sura Cura ROBINSON'S SURE CURE FOR **RHEUMATISM And NEURALGIA,**

And remedy for diseases arising from an impure state of the blood. An antidote for **MALARIA.** Price 50 c. and $1. Sent by mail on receipt of price. Send for Circular.

R. W. ROBINSON & SON,
184 Greenwich Street,
NEW YORK.

Sura Cura



:::JUST PUBLISHED:::

MANUAL OF DIETETICS

— FOR —

Physicians, Mothers and Nurses.

BY

W. B. PRICHARD, M. D.,

New York.

THIS USEFUL MANUAL CONTAINS VALUABLE INFORMATION FOR LADIES; SUCH AS, MATERNAL OBLIGATIONS, CLEANLINESS, CLOTHING, WET NURSING, WEANING AND ARTIFICIAL FEEDING OF INFANTS. ALSO, A COMPLETE DIET FOR THE SICK IN EVERY DISEASE, INCLUDING THE FOLLOWING: PLEURISY, BRONCHITIS, ASTHMA, CONSUMPTION, BRIGHT'S DISEASE OF THE KIDNEYS, CALCULUS OR STONE, CYSTITIS, DIABETES, TYPHOID FEVER, DIPHTHERIA, SCARLET FEVER, MEASELS, ETC., ETC.

Handsomely Bound in Cloth, Fifty Cents,

SENT FREE ON RECEIPT OF PRICE.

ADDRESS,

THE DIETETIC PUBLISHING CO.,

115 FULTON STREET,

NEW YORK.

THE TORSION

Braided Wire Mattress.

At all times a thoroughly ventilated and perfectly clean mattress, it cannot absorb odors, or retain exhalations or disease germs.

D. HAYES AGNEW, M. D., Prof. of Surgery, University of Pennsylvania, says:

"The Torsion Braided Wire Pillow and Mattress I regard as superior to anything of the kind now in use; well suited for either private or hospital use.

Prof. WM. H. PANCOAST, late Professor of Anatomy, etc., in Jefferson Medical College, now Professor of Anatomy and Clinical Surgery in the Medico-Chirurgical College of Philadelphia Hospital Surgeons, says:

"I have used in my surgical practice your Braided Wire, in the form of mattresses, pillows for the head and body, and short pillows for the arm and leg when injured. I find them most admirable, cool and light, yet affording perfect and elastic support.
I have saved a patient from bed sores by the use of the Braided Wire mattress."

WM. H. FORD, President Board of Health, Philadelphia, says:

"I have used the Torsion Braided Wire Mattress with great satisfaction, it is light and therefore easily handled; it is elastic and very comfortable. The case can be easily removed to afford a complete airing, a feature of great importance from a health point of view.
It is an invention of great usefulness.

For descriptive circular and price list, send to

The Torsion Braided Wire Upholstering Company,

1017 CHESTNUT ST., PHILA.

"BILLET"

are

Carefully Selected

French Sardines,

Packed in Choicest Olive Oil.

AT ALL LEADING GROCERS.

Any Retail Druggist in the United States who desires to obtain Advertising Matter, Show Cards, Signs, etc., which will assist and instruct him in the sale of Harriet Hubbard Ayer's Recamier Toilet Preparations and Vita Nuova, should address THE RECAMIER MFG. CO., 52 and 54 Park Place, New York City.

UNEQUALLED Ask your Grocer for, and insist on having, **LEA & PERRINS'** Sauce, "The Worcestershire." It is known throughout the whole civilized world as the Best and most Delicious Sauce. **DELICIOUS**

SCOTCH MARMALADE, Jams, Fruit and Wine, Jellies, &c.
By James Keiller & Son, Dundee.

SCOTCH BISCUITS, Albert, Water, and Oat Cake,
By Robert Middlemass & Son, Edinburgh.

RACAHOUT des Arabes, by De Langrenier, Paris.

BAY WATER, West India, (J. D. S. brand), in cases, one dozen bottles.
Sold by all first-class Grocers.

JOHN DUNCANS' SONS, 43 Park Place, New York. Agents for the United States.

Robert Gordon's

TRADE MARK.

SPICED · SEA · FOODS

(IN GLASS.)

OYSTERS, LITTLE NECK CLAMS, MUSSELL, SHRIMP, LOBSTER, Etc.,

Packed in 8 and 16 oz. Jars. Guaranteed to be strictly Pure.

MADE OF THE FINEST MATERIALS.

—ALSO,—

ROBERT GORDON'S CONDENSED CLAM CHOWDER,

In 3-lb Cans. Cheapest and Best in the Market.

MANUFACTURED BY

JONES, GORDON COMPANY, Limited,

204 West Street, New York.



GOLD MEDAL, PARIS, 18[illegible]

BAKER'S

Breakfast Cocoa.

Warranted *absolutely pure Cocoa,* from which the excess of Oil has been removed. It has *three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup.* It is delicious, nourishing, strengthening, easily digested, and admirably adapted for invalids as well as for persons in health.

Sold by Grocers everywhere.

W. BAKER & CO., Dorchester, Mass.

ESTABLISHED 1872.

GELATINE.

JAMES CHALMER'S SON'S

Transparent Gelatine.

PURITY—STRENGTH.

Best for Family Use.
Jellies, Blanc Mange, Etc.

ACKNOWLEDGED BY EVERY ONE EQUAL TO THE BEST.

RIDGE'S FOOD

is the most reliable substitute known for mother's milk. Its superiority rests on the test of 30 years use in Great Britain and the U. S. A sustaining, strengthening diet for Invalids; nutritious, easily digested, and acceptable to the most delicate stomach. Four sizes, 35c. up. Pamphlet, "Healthful Hints," sent free. WOOLRICH & CO., Palmer, Mass.

LADIES Best, most convenient, entirely new, secure fastening. Send 50c. and waist measure for one to MISS PRESTON, care of Gould Corset Works, Providence, R. I. **Safety Belt.**

STEWART CERAMIC CO.,

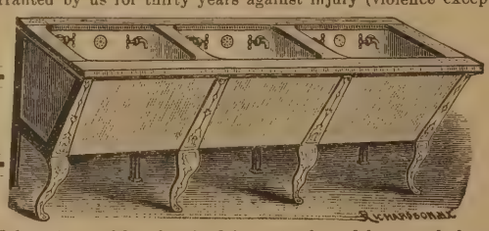
312 PEARL ST., Cor. Peck Slip, NEW YORK.

Sole Manufacturers under Morahan's Patents of

SOLID WHITE CROCKERY STATIONARY WASH TUBS

Warranted by us for thirty years against injury (violence excepted).

CANNOT LEAK.



VERY STRONG.

This cut shows three Tubs set up with galvanized iron stands and heavy ash frame firmly secured on top.

SMOOTH GLAZED SURFACES. ALWAYS CLEAN.

The only solid white crockery Washtub ever made in the world. Do not buy imitations until you see the genuine "Morahan's Patent," stamped on every tub. Washboard and Soapcup moulded in every set.

SOLID WHITE CROCKERY SINKS

Made of same material as the Tubs and fully as strong.

Send for Illustrations and Price Lists. **Send for Illustrations and Price Lists.**

PEACOCK'S BROMIDES

(SYR: BROM: COMP: PEACOCK)

NERVE SEDATIVE.

Each fluid drachm represents 15 grains of the Combined C. P. Bromides of Potassium, Sodium, Calcium, Ammonium and Lithium.

USES:—EPILEPSY, and all CONGESTIVE, CONVULSIVE, and REFLEX NEUROSES.

This preparation has stood the test of time and experience, and can be relied upon to produce results, which can not be obtained from the use of commercial bromide substitutes.

DOSE:—One to two FLUID drachms, in WATER, three or more times a day.

PEACOCK CHEMICAL CO., St. Louis.



These Goods are "Par Excellence,"

Pure, Healthful and Reliable, warranted to give satisfaction in every particular.
For sale by wholesale and retail grocers throughout the United States. VOUWIE BROS., Manufacturers. CLEVELAND and CHICAGO.

OPIUM AND LIQUOR HABIT CURED.

WE solicit an investigation of our system and methods, and will gladly send to any one very interesting matter on the OPIUM HABIT DRUNKENNESS and their effects and cure. Physicians specially invited to examine, and if desirous of trying our remedies, liberal arrangements will be made with them.

THE LESLIE E. KEELEY CO., Dwight, Illinois.

ESTERBROOK'S STEEL PENS

Leading Numbers



14, 048, 128
130, 135,
333, 161.

—For sale by all stationers.—

THE ESTERBROOK STEEL PEN CO., 26 John St., N. Y.
WORKS: CAMDEN, N. J.

Does the Baby Cry?

or does his rollicking laughter make melody everywhere? The healthy babies fed on

RIDGE'S FOOD.

are counted by the thousand. WOOLRICH & Co. on label.

ESTABLISHED 1857.

J. H. CUTTER,

OLD

BOURBON AND RYE WHISKIES.

We are the Sole Owners and Proprietors of this Celebrated Brand of Whiskey.

C.P.MOORMAN & CO. **LOUISVILLE, KY.**

We Guarantee the Superior Quality and Absolute Purity of every Barrel of Whiskey sold by us under this Brand.

FOR THE ILL-EFFECTS

—OF—

Summer Heat, Heat Exhaustion.

Where after a prolonged exposure to a heated atmosphere you feel exhausted, depressed and tired mentally as well as physically, take a dessert spoonful of Bromo-Soda in half a glass of water, and drink while effervescing, when relief will be sure to follow.



A Cure for Sick Headache, Sleeplessness, Etc.

ASK FOR BROMO-SODA and TAKE NO SUBSTITUTE

SWIFT'S

Choice Chicago Dressed Beef

—AND—

MUTTON.

CAN be found at all times in full supply and at popular prices at the branch houses in all the larger cities and is ***retailed by all first class butchers.***

The trade of all marketmen and meat dealers is solicited for our Wholesale Branch Houses, and the ***public may rest assured*** *that in* ***purchasing our meat*** *from dealers they will* ***always receive the best.***

SWIFT AND COMPANY,

UNION STOCK YARDS,

CHICAGO, ILLS.

Tabasco Pepper Sauce

OR LIQUID PEPPER.

Is simply the Pulp of the Ripe Pepper Extracted by Pressure.

The seed of this Pepper was obtained from Central America, and by careful cultivation in Louisiana for many years has been so improved in strength, flavor and aroma, as to have become a new variety of Red Pepper, superior to all others. The pulp is so handled as to retain all the flavor, strength, aroma and color of the ripe fruit, and to keep unimpaired in any climate. It excites the appetite, promotes digestion, and is pronounced, by connoisseurs, to be the finest condiment in the world. For medicinal purposes it recommends itself by its purity, strength and diffusible form.

Manufactured by E. McILHENNY,

NEW IBERIA, LA.

For Sale by all Wholesale Grocers.

CARNRICK'S SOLUBLE FOOD

IS UNLIKE ANY OTHER INFANT'S FOOD THAT HAS EVER BEEN PRODUCED.

℞

THE FORMULA.

Partially Predigested Milk Solids,	**45 parts.**
Wheat with the Starch converted into Dextrin,	**45 "**
Milk Sugar,	**10 "**

We do not claim this food to be "a **perfect** substitute for human milk." But we do claim that **Carnrick's Food approaches nearer to human milk in constituents and digestibility than any other food that has ever been produced**, and that it is the only infant's food that will, without the addition of cow's milk, thoroughly nurse a child from its birth.

We believe that **Carnrick's Food** solves the problem of a reliable substitute for human milk. The Caseine of cows' milk, by partial predigestion with freshly made Pancreatine, is rendered as easily digestible by the infant as human milk.

We have never published an analysis of **Carnrick's Food** "prepared with milk," for, unlike all other foods, it is prepared by the addition of water only, and we base our claim upon the intrinsic value of the food as compared with an equal amount of solid constituents of human milk. All other analyses or comparisons are misleading. We challenge similar comparisons with any other food, and confidently believe, that if **Carnrick's Food** is depended upon for the nutrition of infants, the great mortality among children will be reduced. Full information regarding the process of manufacture will be cheerfully furnished, and samples sent free to those who wish to test **Carnrick's Food.**

REED & CARNRICK, New York.

GORDON & DILWORTH

MANUFACTURING PURVEYORS

Established 1847

ALIMENTARY PRODUCTS

ALL OF OUR PRODUCTIONS BEAR THIS TRADE MARK

WE WILL PROSECUTE ALL INFRINGEMENTS & IMITATIONS







CHOICE DESSERTS

OVER 100 DOMESTIC & FOREIGN FRUITS AND VEGETABLES TRANSMUTED INTO TABLE DELICACIES

PRICES ON PRESERVED FRUITS REDUCED 1ST DEC. 1885

PRESERVED, CANNED & BRANDY FRUITS, FRUIT JELLIES, VEGETABLES, TOMATO CATSUP, SYRUPS & JAMS, SALAD DRESSING, BLACKBERRY BRANDY, MINCE MEAT, PLUM PUDDING, SWEET PICKLES, OLIVES & CAPERS, WINE JELLIES, MARMALADE, SOUPS SAUCES &c.

SOLD BY THE LEADING GROCERS ON THE AMERICAN CONTINENT.

BOVININE, BUSH'S FLUID FOOD.

Is the ORIGINAL and ONLY preparation of RAW FOOD that does not become putrid and disgusting in a short time.

A MOST WONDERFUL NUTRIENT.

The vital principles of Beef and Mutton concentrated. A highly condensed Raw Food Extract. Acceptable to the most delicate taste and smell. Retained by delicate stomachs that reject all other foods It assimilates more readily than any other food known to the medical profession. Bovinine under the microscope shows the blood corpuscles in their normal condition strongly marked, while in other foods or extracts this vitally important element is destroyed by the action of heat in cooking.

Containing 26.58 Per Cent. of Soluble Albuminoids,

According to OSCAR OLDBERG, Ph.D., Professor of Chemistry and Toxicology, and Dean of the North-Western College of Pharmacy.

A. L. LOOMIS, M. D., Professor in Medical Department of University of New York, says: "I prescribe Bush's Fluid Food or BOVININE, and prefer it to similar preparations."

J. S. JEWELL, M. D., Chicago, says of Bovinine: "I am delighted with it; it is what I have been looking for these twenty years, and it supplies a want that nothing else has been able to fill."

DRS. WARD and FRED. SMITH, speaking for themselves and their colleagues of the Hospital of St. Barnabas, Newark, say: "Bovinine was readily taken by the patients, was easily retained, and in many cases by stomachs which had rejected all other forms of nourishment. We believe Bovinine contains more nutriment, relative to the bulk, than any other preparation known to the medical profession."

"During the last four months of his sickness, the principal food of my father, General Grant, was Bovinine and Milk; and it was the use of this incomparable food alone that enabled him to finish the second volume of his personal memoirs.—FRED. D. GRANT."

October 1st, 1885.

Carefully prepared from the formula of the late James P. Bush, by the J. P. Bush Manufacturing Co., 44 Third Avenue, Chicago, Ill.

PUT UP IN 6 AND 12 OUNCE SIZES, AT 60c. AND $1.00 PER BOTTLE.

For Sale by all Druggists.

Principal Office, 2 BARCLAY STREET, NEW YORK CITY.



IMPERIAL GRANUM

THE GREAT MEDICINAL FOOD

THIS ORIGINAL and WORLD RENOWNED DIETETIC PREPARATION is a Substance of UNRIVALED PURITY and MEDICINAL WORTH. A solid extract derived from very superior growths of Wheat——nothing more.

It has justly acquired the reputation of being

THE STANDARD DIETETIC PREPARATION.

And has been recommended and certified to by a large number of Chemists and Physicians, representing a very high degree of medical science as

THE SALVATOR FOR INVALIDS AND THE AGED,

A SUPERIOR NUTRITIVE IN CONTINUED FEVERS,

A RELIABLE REMEDIAL AGENT IN ALL DISEASES OF THE STOMACH AND INTESTINES, (often in instances of consultation over patients whose digestive organs were reduced to such a low and sensitive condition that the Granum was the only thing the stomach would tolerate when life seemed depending on its retention), and, AN INCOMPARABLE ALIMENT FOR THE GROWTH AND PROTECTION OF INFANTS AND CHILDREN. We do not hesitate, however, in saying that no food for the nursling can at all compare with a healthy mother's yield of milk ; but when the breast fails to give sufficient quantity of nourishment, or the mother's milk is lacking in nutritive substance—the IMPERIAL GRANUM is, as has been proved in thousands of cases,

THE SAFEST FOOD.

Unlike those preparations made from animal or vinous matter, which are liable to stimulate the brain and irritate the digestive organs, it embraces in its elementary composition THAT WHICH MAKES STRONG BONE AND MUSCLE, THAT WHICH MAKES GOOD FLESH AND BLOOD, THAT WHICH IS EASY OF DIGESTION, NEVER CONSTIPATING, THAT WHICH IS KIND AND FRIENDLY TO THE BRAIN, and THAT WHICH ACTS AS A PREVENTIVE OF THOSE INTESTINAL DISORDERS INCIDENTAL TO CHILDHOOD. And while it would be difficult to conceive of anything in food or dessert more creamy and delicious, or more nourishing and strengthening as an aliment in

FEVERS, PULMONARY COMPLAINTS, GASTRITIS, DYSPEPSIA and GENERAL DEBILITY,

its rare medicinal excellence in all intestinal diseases, especially in

CHOLERA, DYSENTERY, CHRONIC DIARRHŒA and CHOLERA INFANTUM

HAS BEEN INCONTESTABLY PROVEN.

Sold by Druggists. **JOHN CARLE & SONS, New York.**

MALTINE

MALTINE is far superior in nutritive and diastatic value to any Malt Extract manufactured in the World. There is no reconstructive that excels Maltine in Phthisis and many wasting Diseases.

MALTINE in its different forms is the only malt preparation we now employ, being so palatable, digestible, and easily assimilated. Of its efficiency in appropriate cases there is no more doubt in our minds than there is of the curative power of Quinine, Cod Liver Oil, the Bromides, and the Iodides.
It deserves to stand in the front rank of constructives, and the constructives by their preventive, corrective, and curative power are probably the most widely useful therapeutical agents that we possess.
PROF. L. P. YANDELL.

MALTINE is a valuable food, a food of priceless value at times of emergency. In fact, in very grave gastric cases it is a food which may be often resorted to when at one's wits end what to do.
J. MILNER FOTHERGILL.

Out of 14 trade samples of Malt Extract examined by Messrs. Dunstan & Dimmock, ONLY THREE possessed the power of acting on starch. These brands were MALTINE, Corbyn, Stacey & Co.'s Extract, and Keppler's Malt Extract. WILLIAM ROBERTS, M.D., F.R.S.

I have subjected "Maltine" and all other leading "Extracts of Malt" to an exact quantitative comparison of their diastatic activity. The results demonstrate conclusively the far greater diastatic value of Maltine, and enable me to state, without any qualification whatever, that it far exceeds in diastatic power any of the six preparations of Malt which I have examined. R. H. CRITTENDEN.
Professor of Physiological Chemistry in Yale College.

At the International Health Exhibition held in London, England, the only gold medal and the highest award of merit were given to Maltine by a Jury composed of the best chemists in Europe, and recent analyses made by the most reliable authorities in Europe and America prove conclusively that Maltine—in nutritive and diastatic value—is superior to all other malt preparations now in the market.

NOTE.—Physicians will observe that Maltine, as now prepared, is not so viscid as formerly made, being of a more fluid consistency; and, while retaining the nutritive and diastatic value which has given it precedence over all other Extracts of Malt, it is rendered entirely agreeable to the taste of the most fastidious, and is more easily administered. As now prepared, we positively guarantee that Maltine will not ferment or congeal in any climate or at any season of the year.

COMPLETE LIST OF MALTINE PREPARATIONS.

MALTINE (Plain).	MALTINE with Phosphates, Iron Quinia, and Strychnia.
MALTINE with Alteratives.	MALTINE Ferrated.
MALTINE with Cod Liver Oil.	MALTO-YERBINE.
MALTINE with Hypophosphites.	MALTO-VIBURNIN.
MALTINE with Peptones.	MALTINE with Cascara-Segrada.
MALTINE with Pepsin and Pancreatine.	

Physicians may obtain Maltine from all druggists in every part of the world. In cases where the physician intends to prescribe Maltine, the word "Maltine" should be written, and not simply the words "Malt Extract," or "Extract of Malt."
Send for Pamphlet giving comparative analyses by 100 of the best Analytical Chemists in this country and Europe.
We will be happy to supply any regular practitioner with eight ounces each of any three Maltine compounds that may be selected from our list, providing he will agree to pay express charges on same.

THE MALTINE MANUFACTURING CO.,
54 Warren Street, New York.
Laboratory, Yonkers-on-Hudson.

In corresponding with Advertisers, please mention the AMERICAN ANALYST.

—THE—

CHRISTIAN MOERLEIN
Brewing Co.,
CINCINNATI, U. S. A.,

Brewers of the far-famed

"NATIONAL" EXPORT
(The Queen of Beers)

LAGER.

Owing to its absolute purity, beautiful pale color, fine aroma and nutritious qualities, the above beer has become the PRIME FAVORITE in all the principal hotels and clubs, and in thousands of families throughout the West and South.

ARMOUR & CO.
CHICAGO, ILLS.

PACKERS OF

Pork and Beef Products
CANNED MEATS,
ETC.,
FOR HOME CONSUMPTION AND FOR EXPORT
TO ALL PARTS OF THE WORLD.
Also,
SHIPPERS OF
Choice Dressed Beef,
MUTTON AND HOGS,
In Refrigerator Cars,
To BOSTON,
NEW YORK,
PHILADELPHIA,
BALTIMORE,
And other cities throughout the country.

Pure LAGER BEER,
"IMPERIAL" and "CULMBACHER"
Brewed & Bottled
SPECIALLY FOR
HOTELS, CLUBS
AND
PRIVATE FAMILIES
—BY—
Beadleston & Woerz
291 W. 10th St. New York.
Orders by Postal Card promptly attended to.

Established in London, 1831.

DEAN'S PATENT
ARDENTER MUSTARD.
BEST IN THE WORLD.

WARRANTED ABSOLUTELY PURE.



WARRANTED ABSOLUTELY PURE.

Ardenter Mustard Pellets
—FOR—
Dyspepsia and Indigestion.

UNIVERSALLY recommended and prescribed by physicians. The medicinal property are English mustard seed coated with pepsin and sugar. You will find it will relieve you after using two or three doses. It is very beneficial for Heartburn, Sour Stomach and Headache. They are a beautiful confection for children. Each bottle contains full directions.

W. G. DEAN & SON,
361 and 363 Washington Street, 84, 86 and 88 North Moore Street, New York.

GREENWAY'S PORTER
—AND—
DOUBLE AND EXTRA DOUBLE STOUT.

GREENWAY'S SALE.
INDIA PALE
IN GLASS OR WOOD
AMERICAN
TRADE MARK.
SEND FOR CIRCULARS.
FULLY EQUAL TO THE BEST IMPORTED.
FOR FAMILY OR CLUB USE.
RECOMMENDED BY OUR BEST PHYSICIANS
FOR SALE BY ALL FIRST CLASS GROCERS AND DEALERS.
THE GREENWAY BREWING CO.
SYRACUSE, N.Y.

Greenway Bottling Co.,
BOTTLERS OF
GREENWAY BREWING CO'S BRANDS OF ALE, PORTER, DOUBLE STOUT
—AND—
Germania Brewing Co's Standard Pale Crown Lager & Culmbacher.

N.Y. Depot, 31 Broadway.

FULL WEIGHT
PURE
DR. PRICE'S
CREAM
BAKING
POWDER
MOST PERFECT MADE

Its superior excellence proven in millions of homes for more than a quarter of a century. It is used by the United States Government. Endorsed by the heads of the Great Universities as the Strongest, Purest, and most Healthful. Dr. Price's Cream Baking Powder does not contain Ammonia, Lime or Alum. Sold only in cans.
PRICE BAKING POWDER CO.
NEW YORK. CHICAGO, ST. LOUIS.

STERLING
BAKING
POWDER

MADE FROM
99 50/100 PURE CREAM TARTAR.
This powder never varies. A marvel of purity, strength and wholesomeness. More economical than the ordinary kinds. SOLD ONLY IN CANS.
STERLING MANU'F'G CO.,
12 & 14 Spruce St., New York.

"GOOD MORNING"
COFFEE PERCOLATOR.
RICHEST, PUREST, BEST CUP OF COFFEE EVER MADE.
SIMPLEST AND QUICKEST PROCESS.
RETAINS THE FULL STRENGTH AND AROMA, BUT HAS NO BITTER TASTE.
ONE POUND OF COFFEE WILL GO TWICE AS FAR AS BY ANY ORDINARY METHOD.
FOR SALE BY THE TRADE.
ARE YOU A GOOD JUDGE OF COFFEE?
TEXTILE FABRIC FILTER FOR GROUND COFFEE.
FILTERED COFFEE
IF YOU CANNOT PROCURE IT IN YOUR TOWN, WRITE TO
MANNING, BOWMAN & CO.
57 Beekman St., New York.
Circulars and Price List sent Free on Application.

AMERICAN ANALYST CLUB RATES.

	Regular Price.	Price including American Analyst.
American Magazine	$3 00	$3 25
American Rural Home	75	1 05
American Agriculturist	1 50	1 60
Art Amateur	3 50	4 00
Arthur's Home Magazine	2 00	2 00
Art Interchange	3 00	3 25
Babyhood	1 50	1 60
Ballou's Magazine	1 50	1 75
Bedford's Magazine	2 50	3 00
Cassell's Family Magazine	1 50	1 75
Century	4 00	4 25
Christian Herald, N. Y.	1 50	1 50
Christian Union	3 00	3 00
Cottage Hearth	1 50	1 50
Country Gentleman	2 50	2 50
Current Literature	2 50	2 75
Demorest's Magazine	2 00	2 00
Family Story Paper	3 00	3 00
Farm and Fireside	50	1 00
Fireside Companion	3 00	3 00
Forum	5 00	5 00
Frank Leslie's Illustrated Newspaper	4 00	4 00
Frank Leslie's Popular Monthly	3 00	3 00
Galaxy of Music	1 00	1 25
Gleason's Home Circle	2 00	1 50
Godey's Lady's Book	2 00	2 25
Golden Days	$3 00	$3 00
Good Housekeeping	2 50	3 00
Harper's Bazar	4 00	4 00
Harper's Young People	2 00	2 25
Harper's Weekly	4 00	4 00
Harper's Monthly	4 00	3 50
Household	1 10	1 35
Housekeeper	1 00	1 25
Ledger	3 00	3 00
Lippincott's Magazine	3 00	2 50
New York Weekly	3 00	3 00
Our Little Ones and Nursery	1 50	1 65
Peck's Sun	2 00	2 25
Peterson's Magazine	2 00	2 00
Puck	5 00	4 50
Rural New Yorker	2 00	2 30
Saturday Night, Philadelphia	3 00	3 00
Saturday Evening Post, Philadelphia	2 00	2 00
Scientific American	3 00	3 25
Scribner's Magazine	3 00	3 00
Vick's Illustrated Monthly	1 25	1 50
Western Rural	1 50	2 00
Wide Awake	2 40	2 60
Yankee Blade	2 00	1 50
Young Ladies' Journal	4 00	3 50
Youth's Companion	1 85	2 25

If any paper is desired, not mentioned in the above list, a postal card inquiry will receive a prompt reply. Address,

THE ANALYST PUBLISHING CO.,
19 Park Place, New York

Send for our Club Rates for Medical Journals.

The Standard of Excellence.
KINGSFORD'S
OSWEGO
Pure and Silver Gloss
SILVERGLOSS STARCH MANUFACTURED BY T. KINGSFORD & SON TRADE MARK
STARCH
KINGSFORD'S
OSWEGO CORN STARCH
FOR
Puddings, Custards, Blanc-Mange, Etc.
THE PERFECTION OF QUALITY.
WILL PLEASE YOU EVERY TIME.
Always ask your Grocer for these goods.

THE FINEST MADE
COLBURN'S
PHILADELPHIA
MUSTARD
KING OF CONDIMENTS

AMERICAN ANALYST

FOR THE

FAMILY AND CONSUMER.

A SEMI-MONTHLY ADVOCATE OF PURE FOOD AND THE SUPPRESSION OF ADULTERATION.

Office, 19 Park Place.

[Entered at the Post Office at New York, as Second Class Matter.]

VOL. IV.—No. 23. NEW YORK, DECEMBER 1, 1888. Whole No. 95

CONTENTS.

Adulteration in Massachusetts.... 481
A Microbe Fiend..... 476
Answers to Correspondents..... 478
California Wines..... 473
Chicago Beef the Best..... 479
Domestic Dietetics..... 480
Editorial 478
Infection from Books; National Beef Inspection; The Pure Food Fizzle; Hydrophobia Exploded; The Monopolistic Butchers' Last Ditch; Which is Correct? Alcohol a Crime.
Organic Chemistry Explained..... 477
Massachusetts Adulteration Laws..... 481
Oysters in Ancient Times..... 477
Peanuts, Economic Use of..... 481

CALIFORNIA WINES.

WHY THEY ARE EQUAL IN QUALITY TO THE BEST EUROPEAN VINTAGES.

"Who drinks California wine?" That was a common sneer a few years ago upon lips of prejudiced foreigners and pretended *bon vivants*. Importers of, and dealers in, the alleged wines of Europe were deeply interested in decrying an American product that, if popularized, would inevitably sadly minimize their business very speedily. So they talked learnedly of the "tartar" in California wines; professed to find in them a most offensive "earth flavor," and denounced their "fruitiness" as something unbearable to an educated palate. Aping their pretensions to knowledge, the dealers were echoed by sham connoisseurs, who were generally incapable of distinguishing Pontet Canet from a *vin ordinaire* if they did not catch sight of the labels. Among these it was quite common to hear the affirmation that "one glass of American wine would make me real sick, doucherknow," and the younger, more inexperienced, and absolutely brainless they were, the more unqualifiedly did they denounce all American wines as "beastly stuff, by Jove."

But now that question may be truthfully answered—"nearly everybody who drinks wine at all drinks California wine, either from intelligent choice or under the hallucination that he is imbibing a foreign article." The intelligent viticulturists and wine-producers of Europe—two very distinct classes of beings, it may be remarked—had long appreciated California wines at their true value, realized the almost boundless capacity for their production, and, when the phylloxera and anthraxnose invaded and destroyed the European vineyards, were prepared to turn at once to this country for relief.

Does any drinker of European wines—or, to speak more properly, of beverages supposed to be such—ever think of how strange it is that while thousands upon thousands of hectares of vineyards in France, Germany, Italy, Spain, Portugal and Madiera were completely destroyed by the pests mentioned, the production of wine from those countries, instead of falling off, actually increased? Territories where the vines were fewer by from 40 to 60 per cent. shipped more wine than ever; choice vintages, of which the producing vines were absolutely extinct, were as abundant as ever, and at little, if any, advance in prices; and, though the vineyard proprietors were ruined, the exporters of wines to the United States and their agents here, made as much money as they ever did, if not more. The explanation of it all is in the one word—California.

It is related of an aged wine manufacturer, who was dying, that, in giving his farewell injunctions to his eldest son and heir, he said: "Always remember, my son, that you can make wine out of anything—except grapes." That was a well-understood wisdom among the wretches who shipped to us many hundreds of thousands of gallons of bogus European wines—long before the phylloxera made its appearance—from Cette and Hamburg. Those bogus wines were simply potato-spirit, water, acid, coloring matter and flavoring extracts. Nothing more free from the objectionable quality of "fruitiness" could possible be conceived. But their foreign labels made them delicious to our contemners of American wines, though of course it was admitted that they did not possess such fine "bouquet" as certain other avowedly vinous products from Europe that were higher priced and differently labeled.

The alarmingly enormous decrease in real wine production inspired among European wine manufacturers the happy idea of carrying their deceptions to a higher grade of wines than the cheap ones that they had previously been making as already described. It was, they understood, necessary to have genuine wine to deceive certain classes of drinkers—those who were willing to pay good prices for bottles bearing labels with which they were acquainted. So California wines were carried by ship-loads to France, Germany and Italy, there to be doctored slightly with flavoring and coloring matter, bottled and re-shipped to this country as the products of European vineyards, in which guise they were naturally quite free from "tartar," "earth flavor" and "fruitiness," and were endowed with all the precious gifts of "flavor" and "bouquet" that might be expected from their labeling.

That work is going on to-day more than ever before. Three bottles out of four of our most aristocratically titled imported wines, if they had voices, might honestly chorus upon landing here: "Home again! home again! from a foreign shore!" But those who drink those wines have little really to complain of, beyond the fact that they are paying fantastically high prices for what they might have cheaply and of better quality were they not swayed by affected prejudices against the use of our native products. Gradually they are learning this fact, and consequently joining the already great army of American wine-drinkers.

It must be frankly admitted that a good deal of the wine produced in California twenty years ago was rather poor stuff. There were few among the earlier wine growers there—except the "fathers" at the Spanish missions, who made the superb wines—who had any practical knowledge of the delicate processes for making and keeping wine. They vaguely supposed that there wasn't much about it different from cider-making. As for the nice knowledge of the exactly right moment for racking off wine from the barrel in which it had made its deposit to a fresh one, or the imperative necessity for keeping wine at a regulated temperature and in full barrels, and many other things belonging to the mere rudiments of the art they knew absolutely nothing. Then they were generally affected by an insatiate greed for enormous profits. Nobody in any business in California in those days would have been satisfied with such profits as accrued from like industries in the Eastern States. The men who owned vineyards thought they ought to pay about as well as gold mines. They heard of wines being sold at several dollars per bottle, and, being dazzlingly ignorant of the existence of any great difference between wines, could not see why theirs were not worth as much as any others. It was with amazement and indignation that they learned that the bogus wines of Cette and Hamburg were selling in New York for less than the actual cost of production of their wines, and were actually preferred. In the first flush of disgust produced by that discovery, some of them rooted up their vines and abandoned the business forever. Those who remained in it appealed to Congress for "protection" in the shape of a heavy tariff upon wines imported in bulk, which would so increase the cost of the imported bogus wines as to enable the California vintners to undersell them in the Eastern market. They got what they wanted, but with strange fatuousness at once telegraphed to their New York agents that they required their wines to "appreciate in value to the extent of the tairff just imposed." It was a pretty illustration of the beneficial effect of "protection." Of course, the importers continued to have things their own way. But the Californians were stubborn, and held out a good while. One man who had 16,000 gallons of fairly good wine stored down-town had an offer for it that would have given him a good profit. No; he wanted more, and would not sell for less. And he held on until his uncared-for wine turned to vinegar, and was practically a total loss And there were many like him in lesser degree.

As time wore on, however, great changes crept into the California wine manufacture. Men from the wine producing districts of Europe, skillful, careful, patient and content to conduct the business on a legitimate commercial basis, went to California and either took charge of already existant vineyards or started others of their own, bringing to the service the ripe experience of generations of wine producers abroad. They made wines of such excellence as astounded the connoisseurs of the East and of Europe. Poor Gustave Mahe, president of the French bank in San Francisco, who shot himself during an aberration of intellect caused by illness, was one of the first to produce an exquisitely fine wine in California. He made at his vineyard what he called his "Golden Wine," which was like an ideally perfect Sauterne, even finer than Chateau Yquem, and had he lived he would have exercised a highly beneficial influence upon California wine production.

The man who deserved most individual credit for de-

LACTOPEPTINE,

The most important remedial agent ever presented to the Profession for Dyspepsia, Vomiting in Pregnancy, Cholera Infantum, Constipation, and all Diseases arising from imperfect nutrition.

Lactopeptine precisely represents in composition the natural digestive juices of the Stomach, Pancreas and Salivary Glands, and will, therefore, readily dissolve all foods necessary to the recuperation of the human organism.

CAUTION

We regret that we are compelled to caution the profession in prescribing Lactopeptine, but very careful investigation has proven to us clearly the necessity of it. Substitution of cheap and worthless compounds are being made in many cases where Lactopeptine is prescribed.

Lactopeptine is always UNIFORM, and its effects are SPECIFIC, and no one has ever been able to imitate its digestive value. If you do not obtain positive results when you prescribe Lactopeptine, you can be sure that some substitution has been made, and in such cases it may be necessary for the physician to prescribe Lactopeptine in the original ounce package to insure certainty of obtaining the genuine article. We can confidently make this assertion, knowing the scrupulous uniformity in digestive value of every ounce of Lactopeptine.

Lactopeptine has always been kept strictly in the hands of the Medical Profession, never having been admitted in any publications but Medical Journals. It is prescribed by the most intelligent and educated physicians in all parts of the world, and there are but few physicians who have ever used Lactopeptine that will not agree with the late Prof. L. P. Yandell, when he says: "Lactopeptine is one of the certainties in medicine, and in this respect ranks with Quinine."

In the various forms of Dyspepsia, in vomiting in Pregnancy, and in Mal-nutrition of children, there is no known remedy so positive in results.

P. O. Box 1574. THE NEW YORK PHARMACAL ASSOCIATION, NEW YORK.

veloping the now vast wine interest of California, was Arpad Harazsthy. He, at an infinite outlay of patience, labor, time and money conducted experiments upon the varieties of grapes best adapted to wine production on California soil under the varying conditions afforded in that country; taught vine growers how to harvest their crops, make the wines and keep them; trained men in the arts of manipulating and blending those wines to produce essentially different qualities of excellent wines and, as a member of the firm of Landsberger & Co., from which connection he long since retired to build up a business of his own, was the first to manufacture an exceedingly good genuine California champagne. That champagne, by the way, was the material for many a practical joke in the earlier years of its production. Californians had a mania for champagne. They possessed an idea that it was good for the stomach and no mixed drink sold over a respectable bar was deemed complete without a dash of champagne in it. As they paid for the best, they were determined to have what was highest priced and so supposably the best imported champagne. Importers of that costly beverage artfully kept up the fiction that no champagne was genuine but that which came from France. Constantly, however, gentlemen were making acquaintance with Harazsthy's champagne, through the intervention of friends, and pretty much every one, finding how good it was would say: "By thunder! I don't believe Bill, or Sam could tell that from the Widow's or Mumm's. Couldn't you fix up some so that they couldn't tell by the labels what it is? I'd like to play it on them." The outcome of that frequent demand was the preparation of a small stock of bottles, merely for such practical jokes, with genuine foreign labels stripped from imported bottles and corks branded to match, but containing the California champagne. The instances in which the deception was detected, though it was practiced in hundreds of cases at least, could be counted on one's fingers and toes and many jolly suppers at "The Poodle Dog" were paid for as the penalties of the over-confident would-be connoisseurs who assumed to "know it all." It is but just to say that no such deception was ever practiced in commercial business under Harazsthy's management. He was too proud of the fine wine he produced to permit it to go under a false label, except for an occasional pratical joke. And it was wine worthy of his pride. But he has produced better since. Year after year the vineyards supplying the several choice varieties of wine blended in his "Eclipse" brand of champagne have been more and more perfectly managed in conformity with his requirements, and the results attained have been

MELLIN'S

TRADE MARK.

FOR INFANTS & INVALIDS

FOOD

The Only Perfect Substitute for Mother's Milk.

A Copy of our Book,

The Care and Feeding of Infants

will be MAILED FREE to any address.

DOLIBER, GOODALE CO.,

40-41-42-43 Central Wharf, Boston, Mass.

STEVENSVILLE MILLS.

IMPEROYAL VACUUM COOKED **OATS.**

IMPEROYAL VACUUM COOKED **WHEAT.**

M. D. STEVENS'

SOLE MANUFACTURER OF

ABSOLUTE PURITY.

M. D. STEVENS — IMPEROYAL — WHEAT & BUCKWHEAT — FLOUR — REGISTERED TRADE MARK.

HOUSEHOLD NECESSITY.

ONE MINUTE IN PREPATATION.

IMPEROYAL VACUUM COOKED **HOMINY.**

IMPEROYAL GRIDDLE CAKE **FLOUR.**

Recommended by Eminent Physicians and Chemists.

☞Adapted to all kinds of Pastry, Bread, Biscuit, Griddle Cakes, etc., and its absolute purity and freedom from Alum, Terra Alba or any injurious ingredient, makes it a necessity in every household. No lady can afford to be without it. Sold by best Grocers.

M. D. STEVENS,

Room 18, Mercantile Exchange,

Cor. Hudson & Harrison Sts., NEW YORK.

Doctor

Cupid's

Advice.



It is a full and complete diet, prepared with water only. Always uniform in quality and the most economical food available.

THOMAS LEEMING & CO., SOLE AGENTS, NEW YORK.

F. W. DEVOE & CO.,

ESTABLISHED 1852.

PURE MIXED PAINTS

WE desire to call attention of consumers to the fact that we guarantee our ready-mixed paints to be made only of pure linseed oil and the most permanent pigments. They are not "Chemical," "Rubber," "Patent," or "Fireproof." We use no secret or patent method in manufacturing them by which benzine and water are made to serve the purpose of pure linseed oil. Sample cards containing 50 desirable shades, sent on application.

Catalogues of our different departments to responsible parties.

FINE VARNISHES, WOOD FILLERS, WOOD STAINS.

Artist's Materials. Mathematical Instruments.

Cor. Fulton and William Sts., New York.

COFFIN, DEVOE & CO.,

179 RANDOLPH STREET, CHICAGO.

TO THE PUBLIC.

We sincerely regret our publication of Dr. E. T. DARBY's endorsement of Dr. Mason's Combination Tooth Pick; as we now learn that his expressions were intended only for the private inspection of the inventor.

HORSEY MFG. CO., Utica, N. Y.

Manufacturers of the Celebrated



HARTFORD'S PROMINENT PHYSICIAN,

Dr. E. W. KELLOGG, expresses his appreciation, as follows:

"It is my opinion that from a hygienic point of view, the Ideal Felt Tooth Polisher offers decided advantages over the former methods of caring for the teeth; **and as a beautifier of them it is unrivalled."**

Prices:—Tooth Picks, 10c. per Case. Felt Polishers, 18 boxed, 25c. Holders for same, in bone, horn or celluloid, imperishable and attractive, 35c. **For Sale by all druggists, or mailed on receipt of price by**

HORSEY MFG. CO., Utica, N. Y.

BURNETT'S Standard Flavoring EXTRACTS

PERFECTLY PURE HIGHLY CONCENTRATED

THE superiority of these Extracts consists in their

PERFECT PURITY AND GREAT STRENGTH.

There is no subject which should more engross attention than the purity of the preparations which are used in flavoring the various compounds prepared for the human stomach.

They are not only true to their names, but are prepared from fruits of the best quality, and so highly concentrated that a small quantity only need be used.

JOSEPH BURNETT & CO., Boston, Mass.

proportionately improved. Large capital and a perfectly appointed establishment under his personal, liberal, enterprising and skillful control, have also greatly increased his advantages. These and other causes, needless of particularization, have conspired to enable his attainment of that which has been his goal from the commencement of his work on the Pacific slope, viz.: The production of a California champagne that ranks, in the estimation of all genuine connoisseurs, as equal to the best of Europe. And his endeavors have been well rewarded. California champagne is now popular not only in this country among intelligent wine-drinkers, but in Europe, where Harazsthy's "Eclipse" holds its own, even in France, against the French champagnes, appearing everywhere on the wine cards of the best clubs, finest hotels and most fashionable restaurants. The fact admits of no question that California champagne has "come to stay."

And the same may truthfully be said of the California still wines, both dry and sweet, in their many varieties. The popular appreciation of them has been of slow growth, for it has required nearly twenty years to bring them into such favor, but it is now firmly established at last. A number of the more important producers, both firms and companies, now run their own establishments here in New York for the direct sale of their wine to consumers without the intervention of middlemen. By so doing they attain at least two good results, viz.: the supply of their products at prices which, though yielding them a fair profit, are much below what they could be by any other mode of handling practicable; and the absolute certainty that their reputation will not be made to suffer through any of the wicked arts of extension, fortification, etc., known to the cunningly middlemen. Selling for themselves they have positive knowledge that every drop of wine sold under their brand or label is absolutely pure, just as they made it, and are able to conscientiously swear to that if required.

That is a very important matter, not only for the immense advantage that it gives in competing with the importers of cheap bogus wines, but as the most effective means of repressing the fraudulent imitations of California wines manufactured and vended in the East. Alluding to those imitations serves as a reminder that one of them especially deserving of cautionary mention is the fraudulent "fizz," falsely called champagne. Genuine champagne, whether made in one part of the world or another, is always produced by one and the same process. The juices of different varieties of grapes, made into still wines, are skillfully blended in varying proportions so as to produce by their combination exactly the flavor, strength and color desired, are then bottled, and are fermented in the bottle. After a certain time, when that fermentation has reached the proper point and the wine has thrown down its sediment into the neck of the bottle, the sediment is removed by uncorking; a little old wine with rock candy dissolved in it is added to take the place of the wine lost in the process of uncorking, and afford material for making more carbonic acid gas, and the bottle is recorked. The bogus cheap stuff, mendaciously called American champagne, is very differently made. A quantity of the cheapest, sour, low-grade wine, hardly distinguishable from vinegar, is "extended" with water, sweetened with glucose, tinted with aniline dyes, or some other coloring matter, strengthened with alcohol and flavored a little with some extract or essential oil in minute quantities. This concoction is bottled and charged with carbonic acid gas made by the action of sulphuric acid upon marble dust. When it is all finished and ready for market, the wire and label upon the bottle are each worth more intrinsically, and have cost more, than the contents. Insulting to the palate and injurious to both brain and stomach, the vile mixture should be tabooed by law, its manufacture for fools at home made a misdemeanor at least, and its exportation, for the damning of the fair fame of our good wines abroad, be punished as a felony. There are evil practices in the treatment of still wines, to render marketable those otherwise unsalable, to coarsly simulate others of higher grade, or to adapt them to depraved and vicious tastes; but these are generally confined to sweetening with glucose, fortifying with brandy, and doctoring the flavor with only moderately harmful substances, consequently are somewhat less abominable than the bogus champagne manufacture.

This is all a very unpleasant branch of the subject and is only referred to as a warning to wine drinkers and to enforce what has been said of the ample security against such dangers afforded by companies dealing directly in their own goods with consumers. Unhappily, since California wine has grown so greatly in popular favor, and its production has become a business interest of such enormous proportions, it is no longer a sufficient guarantee of the purity of a wine to know that it certainly comes from California. There are yet there ignorant viticulturists and incompetent vintners who, year after year, produce only bad wine, fit for nothing but conversion into poor vinegar, or to serve as the basis for manipulation by unprincipled men whose malefic skill enables them to make it seem good to those who are not expert judges. Both bogus champagne and falsified still wine are made there, just as well as in New York. Hence, it is judicious to buy only from those of established reputation who deal in what they themselves produce; and if this rule were generally adopted the men who now bring discredit upon the name of California wine would very soon be driven out of business.

It seems difficult for many persons to comprehend how it is that such an infinite variety of wines come from one part of the country, as we get from California. Their mental vision sees quite clearly how it is to be naturally expected that we should get one sort of wine on the banks of the Rhine and another very different in Jerez, because those places are wide apart. And they may even understand how different modes of producing wines may work extreme changes in their character, as in the manufacture of French champagne and of Hungarian Tokai. That different kinds of grapes will yield dissimilar juices, of course, "goes without saying." Yet, with all this, they cannot believe that it is all right that so many sorts of wines come from California. Well, let us see if it is not. In the first place, California is a big country. If you were to scatter European principalities around over it, he who went afterward to gather them up would have to employ a guide to find them. And in that vast expanse of territory you can find pretty much the sort of climate and temperature you may want, provided it is anything like what could be expected of a country adapted to the growing of grapes. Rhineland is no colder, nor is Portugal hotter, than places you can pick out in California and grow grapes in. And as diversified as her climate is her soil, except that everywhere—only in the salt sands margining the ocean, and upon the cloud-kissed, rocky and snow-capped peaks of her mountains—it is fertile beyond the wildest dreams of Nature's bounty. The grape vine grows everywhere luxuriantly; not merely three or four, or a half-dozen kinds of grape vines, but fifty, an hundred kinds, any number you choose to plant. Having all those natural advantages at his command, what is to prevent the intelligent California grower employing any sorts of grapes used for wine-making in any other part of the world, applying any processes in vogue elsewhere, and producing any number of different kinds of wine that he pleases? That is just what he does do. If he wants a wine that depends for its flavor upon a particular kind of grape, he selects a locality in which that grape flourishes to perfection, cultivates his vines in accordance with the wisdom gained through ages of experience in other lands where that grape has formerly grown, makes and treats and keeps his wine from it, as should be done, and, after all that, "what's the matter" with his getting the wine he is after? If not only an especial grape, but a peculiar process in its treatment is required, such, for instance, as in the making of Tokai, for which the grapes must be left hanging on the vines until they almost become raisins before they are pressed. He knows exactly what should be done, and does it. Not only in the making of champagne are various wines blended, but in some still wines, in order to obtain the volume of one, the body of a second, the flavor of a third, and perhaps the color, or fire, of a fourth. When that is deemed desirable, where in all the broad world beneath the light of the patient stars can such facilities and advantages for it be found as here in California? Why, if necessary



so to do, the freshly pressed juices of the grapes, or the grapes themselves, in practically limitless quantities, can be, in four or five hours, massed at a central point from half-a-dozen vineyards an hundred miles apart.

Realization of these facts will readily enable any one to see how it is that one wine-producing concern is able to offer together Riesling, claret, sherry, Madeira, port, Burgundy and various other wines, all of its own manufacture, all perfectly pure, and all so good as to challenge the admiration of critical judges.

It is quite possible that mischief has been done in the past by the ill-advised christening of some California wines with high-sounding French, German and even Italian names. The plea of those who have done so has been that they merely wished to indicate that the wines so distinguished resembled those after which they were named. Even if that was true, the moral impression produced was that they were imitations, and consequently open to suspicion. But it generally was not true. Highly cultivated palates can detect infinite delicacies of flavor that belong to particular wines, and that cannot be imitated. Imagination helps the palate along sometimes, no doubt, and how far this may go the fanciful stories associated with certain famous brands of wine conveys an idea.

Thus it is affirmed that one vineyard has never produced exactly the same quality of wine since a dividing line was run through it, to mark partition of ownership, as it did before; that another always produces better wine in the years when a child is born to its noble owners than at other times; that the wine from a third loses almost all its distinctive flavor if poured into a colored glass, etc. Let that all go for what it is worth, which is probably very little.

Calling a wine Johannesberger or Chambertin does not make it either. The California wines are good enough to stand on their own merits. With the progress of time-perfecting methods of cultivation and manufacture, it is not at all improbable that we may yet have still wines from the Pacific slope as delicate and perfect in all respects as any that the Old World can boast, and when they come along we may be very sure that names of their own will be found for them. Meanwhile, let us be thankful that we have already from California an overwhelming abundance of superb, pure, healthful, invigorating wine, good enough for anybody and cheap enough for everybody to drink. And let us be content with naming it, in its various kinds, after either the grape from which it is made—as the Riesling, Zinfandel and Muscatel—or a recognized class of wine, such as hock, sherry or port.

The popularization of pure California wine should be a matter of very serious personal interest to all the community of New York, except, perhaps, the 720 persons who voted the "prohibition" ticket in the recent election, and who cannot reasonably be expected to have anything but a theoretical concern about such questions. To those who use vinous, spirituous or fermented beverages, it appeals strongly as offering them a drink that is almost as cheap as beer, yet far more pleasant and beneficial, and infinitely less hurtful than strong liquors. Those who do not habitually drink stimulants of any kind, still cannot escape their share of the common interest in replacing, to a large degree, the evil intoxicants now generally used, by a substitute that will diminish drunkenness, pauperism and crime, an effect that would inevitably follow upon the popular adoption of pure wine as a beverage instead of strong drinks.

J. H. Connelly.

A MICROBE FIEND.

MICROBES AND PHYSICIANS TO BE SIMULTANEOUSLY EXTERMINATED.

"William Radam, the Microbe Killer," is the legend on a panel advertising card that meets the view of the passengers on a certain line of New York horse-cars. It is illustrated by a ghastly cut of an articulated skeleton, holding up its bony arms and fingers to ward off the expected blow from a formidable club swung by an inoffensive-looking youth. Not understanding whether the advertisement referred to some Bowery Dime Museum, where, among other curiosities, the skeleton of some notorious murderer or that of an innocent victim of a murderer was to be seen, a further study of the legend became necessary. The conclusion finally arrived at was that one Radam desired to have it understood that every ill flesh is heir to is due to microbes, and that he had discovered an agent to destroy these microbes, and thus cure all human ailments, for a consideration. Further particulars might be obtained at 1361 Broadway, New York. The American Analyst cannot permit any such discovery to go unnoticed, so one of the local staff was despatched to learn all that was to be learned. At the number given is a small store, with two show windows illuminated by a painted skeleton and microbe killer, and numerous circulars pasted over the windows. A request for a circular was immediately complied with, and a hospitable invitation tendered to partake of the microbe killer. Horror of horrors! did the salesman mistake the reporter for a cannibal! No; to his great relief he was informed that the microbe killer had been jugged. It was a harmless-looking liquid in a gallon jug. A dose was poured out in a wine glass, and the newspaper man was urged to partake, assured that it would not harm him. Summoning up courage in the cause of science, he tasted and found he was drinking what seemed very much like a weak dilution of nitro-muriatic acid. He was told that this peculiar taste was due to the remarkable fact that the microbe killer contained no acid, but was merely an electrical extract of steam and air, or perhaps what might be called the gases of superheated steam and common air extracted by a secret process of electricity. But then it was in a common stone jug, corked with an ordinary cork. What kept the expansive force of steam or the ethereal powers of gas made from steam and air, or the subtle vapor of electricity, confined? He was positively assured that it was all there in the little brown jug, price only three dollars. Could he buy a more moderate amount of concentrated Keeley motor than a gallon? No; gallon jugs could not be made to hold less than a gallon, and bottles were not strong enough to hold such mysterious forces as condensed steam gas and air, even if corked as the mighty gallon jugs were. Besides all this, the inventor believed that anything that was worth doing at all was worth well doing; consequently, as it always took at least a gallon of microbe killer to cure a case, be it of headache or a corn, a colic or yellow fever, cholera, small-pox, leprosy, a felon on the hand, or a sour stomach, a gallon of microbe killer must always be administered either internally or externally, as a gargle, ointment, lotion, liniment, enema, draught, mixture, elixir or eye wash, on a rag or in a spoon, with a sponge or a tumbler, it mattered not which, so long as a gallon of the genuine microbe killer at three dollars per gallon, bought from the inventor or his agents, and bearing the picture of the grinning skeleton and clubbing youth on the label was taken and paid for. Further information could not be obtained; all else was to be found in the circular. With this circular in his pocket the writer rushed home possessed of but one desire—to read all about this latest and greatest discovery. On the way he mused over the passing strange things he had heard. All sorts of chemical formula floated through his brain, such as $3H_2O+O_6$ or NO_3Cl_2 or $NO_5+Cl\,H=$, but it was useless; no combination of steam and air combined, and medicinally prepared by electricity, could be made to taste like elixir of vitriol. There was but one solution; it was untrue. However, he had to peruse the circular yet, and this was a fat feast. The circular is headed "A Genuine Revolution," and starts out with the proposition that preserving a thing is to stop it from decaying. We quote now from the circular:

"All plants and animals live until they die, and then are consumed by germs, called microbes, and this is the end of everything. These microbes, some of which are poisonous and some harmless, exist everywhere and in everything. When swallowed they enter the blood-vessels and create sickness and death, after which they consume the inanimate body. There are many thousand kinds of these microbes. When we inhale a microbe in the night the little thing multiplies so fast that it tickles our throats and we must cough. Sometimes the cough is harmless and then the microbe disappears, but often it is the foundation of different diseases, such as catarrh, headache, bronchitis and consumption, all different, but caused by this insidious microbe. There is no disease that is not microbe. Microbes decompose your blood down to fermentation, disease and death. The microbe is the only cause of fermentation; we must learn to stop fermentation by killing the microbe. Fermentation causes sickness and death. The microbe cannot be killed by medicine. More people get killed every year by drugs than by microbes. Doctors vary in their methods of getting microbes out of you; some do it by pulling them out through the skin with plasters, and others with a liniment. Others, again, try to shake them out with electricity, but medical science is baffled in not knowing how to kill the microbe without killing the patient; Radam knows how to do it, excepting in cases of low consumption—it is too late. The microbe killer will even kill the microbes on your teeth. Fits are cured in six months with the microbe killer—because fits are caused by people being so full of blood—so that when the spell comes on the blood runs to the head and brain. Insane persons can all be cured with the microbe killer, because it makes their blood as clear as scarlet. An attempt was made last summer to try the microbe killer on cholera and yellow fever, but the jealous doctors would not allow it. Believe nothing that you can't see; don't believe that there is a devil or a gehenna, because you have not seen them, and the minister who tells you that has not seen them; but believe me that there are microbes, and that my microbe killer kills them, as I have seen it, although you may not have seen as much as I have. I am a plain man, a florist by occupation. I have not been educated much, but I have read a great deal and studied nature all my life, so I know what is what, and want you to believe me every disease comes from one cause—microbe. Take any disease. For instance, you eat too much; fermentation goes on in your bowels; now drink microbe killer, and fermentation is gone or the microbes are killed. I have found the genuine life preserver, and have made a vital revolution with the microbe killer. *Similia similibus curantur.* Close all medical colleges, kill all the doctors, and burn every medical book. I am the great Doctor Eisenbarth, who cures every one by his own art. My name is Radam."

Pyrotechnic Photography.—A curious photographic apparatus, in which a camera is raised by a rocket and lowered by a parachute, is being developed by a French inventor, M. Amedee Denisse. In its experimental form, the cylindrical camera has twelve lenses round its circumference with a sensitive plate in its centre, and is provided with a shutter which opens and instantly closes as the apparatus commences to fall. The descent is eased by the opening of the attached parachute, which is drawn back to the operator by a cord attached before the firing of the rocket. For securing bird's-eye views, the photo-rocket offers several important advantages over balloon-photography, such as comparative cheapness in operating and freedom from risk in case of use for military reconnoitering.

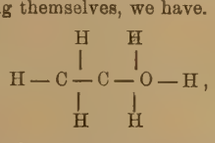
ANALYSES OF LAGER BEER MADE BY F. E. ENGELHARDT, PH. D.

	Specific Gravity.	Alcohol, Per Cent.	Extractive Matter, Per Cent.	Water, Per Cent.	Maltose Sugar, Per Cent.	Dextrine, Per Cent.	Albuminoids, Per Cent.	Lactic Acid, Per Cent.	Ash, Per Cent.	Phosphoric Acid, Per Cent.	Adulterations or Deliterious Matter.
George Bechtel, Staten Island, N. Y..... 1—A.	1.01450	4 240	5.750	90.010	1.420	2.745	0.500	0.153	0.302	0.093	None.
Ballentine & Co., Newark, N. J.....17—B.	1.01540	3.730	5.670	90.600	1.426	2.680	0.677	0.174	0.279	0.107	None.
Peter Doelger, New York..... 2—B.	1.01564	3.710	5.770	90.520	1.590	2.510	0.706	0.150	0.309	0.107	None.
Joseph Doelger, New York..... 3—C.	1.01343	4.280	5.350	90.370	1.282	2.563	0.319	0.162	0.318	0.106	None.
The Hermann Brewery, New York.....16—Q.	1.01970	3.590	6.470	89.940	1.434	3.159	0.869	0.193	0.301	0.098	None.
Jacob Hoffmann, New York..... 5—E.	1.01870	3.756	6.462	89.782	1.563	3.303	0.760	0.202	0.311	0.078	None.
Gottfried Krueger, Newark, N. J.....15—P.	1.01200	4.100	4.297	91.603	0.913	2.037	0.624	0.150	0.321	0.076	None.
Williamsburg Brewing Co., Brooklyn, E. D.... 4—D.	1.01744	4.190	6.380	89.430	1.448	3.004	0.810	0.212	0.339	0.098	None.
Th. & Wm. Ebling, Morrisania, N. Y.....18—S.	1.01750	4.317	6.586	89.097	1.435	3.141	0.657	0.123	0.337	0.097	None.
George Winter, New York.....6—Fr.	1.01621	4.250	6.209	89.541	1 485	3.433	0.700	0.212	0.352	0.098	None.

ORGANIC CHEMISTRY.

A BRIEF AND LUCID EXPOSITION OF ITS CHARACTER.

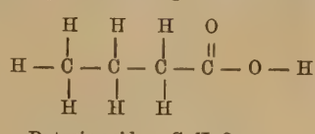
Chemistry is divided into two great departments—the organic and the inorganic. The organic substances were formerly but little studied, and the best work of the earlier chemists was devoted to investigations upon the metals, metalloids and other elements and compounds which were not dependent for their existence upon the action of living organisms, as was formerly supposed. In 1828, however, Wohler succeeded in forming the well-known excretory product of the animal organism, urea, from iso-cyanate of ammonia, a strictly inorganic salt. This brilliant result called the attention of chemists to this class of substances; and at the present day, organic chemistry, or the chemistry of the compounds of carbon, receives a large share of the attention of investigators, somewhat to the neglect of the equally interesting and important inorganic compounds. A reaction seems to be taking place of late years, however, as shown by the extended investigations of Dr. Gibbs upon complex inorganic molecules, of Dr. Crookes upon the nature of the elements, and of Professor Cooke and many other chemists upon the atomic weights. Organic compounds are those made up of a skeleton of carbon atoms to which are joined atoms of hydrogen, oxygen, nitrogen, and, more rarely, other elements. For a familiar example, we may take common alcohol, the symbol of which is C_2H_6O. Extending this into a structural formula, showing how the atoms are united among themselves, we have.



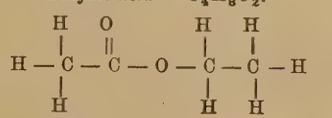
which shows the foundation or skeleton of two carbon atoms with their chemical affinities, satisfied by the addition of five atoms of hydrogen and one of hydroxyl (OH).

It is a peculiar tendency of carbon atoms to unite among themselves in an endless variety of ways. Carbon has four valences, or chemical affinities, and can unite with four atoms of hydrogen or other element having only one valence. The simplest hydrocarbon, therefore, has the composition CH_4, and is known as *methane*, or marsh-gas. But, owing to this tendency of carbon atoms to unite together, we find there is a regular series of such compounds, each differing from the other by CH_2. Thus we have *ethane*, C_2H_6; propane, C_3H_8; butane, C_4H_{10}; and so on up to hexadecane, $C_{16}H_{34}$. Theoretically the series might be continued indefinitely, but only a few of the higher members are actually known. Several other series are known, dependent upon the different number of valences or affinities of the carbon atoms which are neutralized by uniting with each other; and, as each of the members of these series can be changed in a great variety of ways by the addition or substitution of other elements and compound radicals, it will be seen that the number of possible organic compounds is almost infinite, and increases at the same rate as the numbers in problems of permutation. Starting with the skeleton of carbon atoms, we can form or build up different individual organic substances, just as the different human individuals are all supported by a similar bony framework.

But there is still another and greater cause for variety in organic substances. This is isomerism, or the occurrence of two or more bodies, different in every respect, but possessing the same chemical composition. A simple example is found in two substances known as butyric acid and acetic ether, both having the symbol $C_4H_8O_2$, but with their atoms arranged in very different order, as shown by the following structural formulæ:



Butyric acid = $C_4H_8O_2$.



Acetic ether = $C_4H_8O_2$.

According to this theory of *position* the different compounds are built up from the same elements, just as different buildings may be formed out of the same bricks. Of course, this is only a theory, as we cannot actually prove the existence of the atoms themselves, to say nothing of their position in the molecule; but the theory perfectly explains all the observed facts, and evidently is based upon some great natural law, although it may be an entirely different one from that which we conceive it to be at present. The artificial production of alizarin, or the coloring principle of madder, is a triumph of this theory, as it was due entirely to the considerations based upon this theory of position. The working out of these structural formulæ, as they are called, is engaging the attention of the majority of chemists at the present day.

Of the millions of possible organic bodies, only comparatively few have ever been actually produced. The majority of them are of no practical value, although, on the contrary, some of the most important and useful substances known are included in this class. Albumen, gelatine, starch, woody fibre, sugar, morphine, quinine, indigo, and the aniline colors, all possess the nucleus of carbon atoms. This peculiar element, which is so closely connected with the products of living beings, forms, when combined with oxygen, only the dead, inactive carbonic dioxide, or, when united to nitrogen, becomes a part of the highly poisonous derivatives of cyanogen, the radical of the deadly prussic acid. No other element exhibits itself in so many different forms, and none confers its own inherent characteristics upon its compounds to a less degree. We have yet much to learn about the true nature of the carbon compounds; and until this knowledge is obtained, we must rest content to explain the singulnr phenomena presented by these bodies, by an unproved and perhaps unprovable theory.—*Pop. Science News.*

OYSTERS.

HOW THEY WERE EATEN IN ANCIENT TIMES.

Raw oysters were eaten at Athens and Rome as a preprandial whet, and although we have no evidence that the English mediævalists followed so good an example, still there never was a time when English epicures failed to cultivate, or at least to plunder, oyster beds. To discredit them as judges of fish, however, and to prove that the tastes of epicures have changed, if not improved, it is only necessary to mention that our ancestors sugared their oysters. This barbarism was due to the influence of the Romans, who coated their oyster with honey, and kept them until they were slightly putrid. The simple and clumsy methods of Apicius, the third celebrated glutton of the name, for preserving oysters, was to wash them in vinegar, and pack them in vessels coated with pitch. The oysters thus prepared and sent from Britain to the Emperor Trajan, when in Parthia, were considered "fresh" and have been sufficient to entitle this great man's name to be handed down through twenty centuries. If he is to be deemed famous in direct proportion to the nastiness of his invention, he should be famous indeed. Brilla Savarin's preprandial whet consisted of three or four dozen oysters. Sieur Laperte, whom he used to entertain tete-a-tete at dinner, is said to have complained because he could not get his fill of oysters. Savarin determined to give him satisfaction in this respect, and let him go to his thirty-second dozen, when Laperte turned his attention to the dinner with powers unembarrassed by his prelude.

COPPER PIPES.—Steam pipes of copper are now made by electro deposition from sulphate of copper solution. The pipe is formed on an iron core in the depositing bath, and the deposited copper is pressed by a moving tool as it is deposited, so as to give a fibrous strength to the crystalline copper. After the pipe is thus formed it is subjected to hot steam, which expands the copper shell, or pipe, clears off the iron core, thus separating the two. These pipes have no joints and are said to be very strong, tests showing that they break with strains of from twenty-seven to forty-one tons per square inch.

MUTILATED CHRYSALIDES.—A correspondent of an exchange gives an account of how a chrysalis of the Monarch butterfly developed while pierced by a pin, the imago appearing in due time. He also pierced some chrysalides of the cabbage butterfly (*Pieris rapæ*), and they also brought forth perfect insects. One of these insects, when hatched, had the pin through the thorax, as if transfixed in the perfect state. Of course, they are badly deformed; but it goes to prove that injuries may be inflicted upon the chrysalides without preventing their development.

American Analyst,

Published on the 1st and 15th of each month.

Subscription, - - - - - $1 per year.
Single Copies, - - - - - 5 cents.
Subscriptions to foreign countries, - $1.50.

Remit by Express Money Order, Draft, P. O. Order, or Registered Letter.

Advertising rates on application.

THE ANALYST PUBLISHING CO.,
Publishers.

H. LASSING, M. D., } *Editors.*
T. P. McELRATH, }

No. 19 Park Place, ... New York.

NEW YORK, DECEMBER 1, 1888.

CORRESPONDENTS AND EXCHANGES.

Please direct all business communications to

THE AMERICAN ANALYST,
19 Park Place,
New York.

ANSWERS TO CORRESPONDENTS.

REBECCA.—We have answered the misstatements of the Royal Baking Powder Company so often that our readers must have become tired. It is not true that their powder is the only powder not containing lime and ammonia, nor is it true that it is the best powder. We consider Price's or Sterling's powder better, and could name several powders which are just as good. Price's and Cleveland's are made from the same grade of cream of tartar as the Royal.

F. R., MILFORD, PA.—The stimulative action of tea and coffee is usually attributed to the alkaloid which is common to both, and which bears the name of theine or caffein. Prof. Kossel, of Berlin, has discovered a new constituent in tea, to which he has given the name theophyllin, which, if it proves to be a stimulant, and does not exist in coffee, the cases of people who can drink strong coffee with little nervous disturbance, but are excited by tea, are explained.

SCRIBE. — Writers' cramp is a spasm caused by excessive labor of the muscles of the hand, especially of the fingers. It is not confined to writers, but persons are liable to it who are engaged in employments which demand continuous use of the fingers and hands. Writing is a very complicated process, involving the harmonious action of several small muscles of the fingers, and a few of the hand and forearm. Some of these muscles draw the fingers in toward each other; others draw them outward; still others turn the hand to the right or left. The spasms so act on these muscles as either to cause the thumb and forefinger to grasp the pen convulsively or to twirl it on its axis, or to lift it suddenly from the paper.

W. F., ELGIN, ILL.—Amber is not very plentiful, being found mostly in the Baltic Sea, where there is a vein running from Russia to Norway and Sweden. Engineering appliances are used to collect it. Dredging boats are sent out in fine weather, with long strings of iron pails, that are constantly dragging up the bottom of the sea and turning their contents on to the decks of the boats. The amber is picked out and the refuse thrown overboard. Another method of collecting amber is by divers, who, by means of an air pump, are enabled to remain under the water for four or five hours. The vein of amber has been found to run under the land as well as under the sea, and a mine has been sunk to a depth of 150 feet below the sea level, and is worked like a coal mine.

INFECTION FROM BOOKS.

The AMERICAN ANALYST has, on several occasions, called attention to the disease-carrying qualities of many of the books in our circulating libraries. These volumes, passing through a multitude of hands, become in time soiled and ultimately impregnated with dirt to such an extent as to often render them repulsive to the eye and correspondingly offensive, if not dangerous, to handle. There is a wide-spread impression that library books, after reaching this stage, are potent vehicles of disease germs, and the managers of many public libraries in Europe have introduced measures for disinfecting them. We have not heard of any of our American libraries having adopted similar precautionary measures, though we know of institutions of that kind in this city which send books out through the community whose appearance suggests a bonfire as the only effective means of cleansing them. For the information of our American librarians we will describe the manner in which the manager of the free library in Dundee, Scotland, disinfects books which make their way back to the library from quarters of the city in which the sanitary inspector may report the existence of some infectious disease. Upon the receipt of the report notice is at once sent to the residents of the designated quarter having books out to retain them until further orders. When these books are returned to the library they are thoroughly disinfected. The apparatus used consists of a sort of closed cupboard made of ordinary tinplate with a lid at the top, a wire shelf half way up and a little door at the foot. When the books are returned the lid of the apparatus is opened, and the books placed on their edges, with the leaves opened out as much as possible on the wire shelf. The lid is closed, and a sulphur pastille is lit and put in at the little door on the tray. In a few minutes the sulphurous fumes penetrate between the leaves, effectually destroying germs of disease, if such exist. It is only fair, however, to state that the opinion is by no means unanimously entertained that books are competent to spread infectious diseases. The municipal authorities of Dresden, in Saxony, recently had a thorough experimental investigation of this question conducted. A number of much-used volumes from the town library were taken for the purpose. The dust from the leaves and covers were sown in nutrient media and cultures reared, the result being that no microbes belonging to infectious diseases were found—the dust being, in fact, nothing but ordinary dust of a harmless character. Again, the dirtiest leaves in the books were rubbed first with the dry finger and then with the wet finger. In the first case scarcely any microbes were found on the finger; in the second case plenty were found, but all appeared to be of a non-infectious character. Especially is it noted that there were no tubercle bacilli. Lastly, books were soaked for two days in spirit containing 10 per cent. of carbolic acid. This treatment destroyed all the bacilli, and proved harmless to the volumes. The conclusion arrived at was that the danger of circulating libraries spreading infection is very slight; but a recommendation is given to dust books well before reading them, and never to wet the finger in the mouth for the purpose of turning over the leaves. For our own part we believe the Dundee librarian's precautions to be more wisely founded than the Dresden officials' deductions.

NATIONAL BEEF INSPECTION.

We have a Department of Agriculture thoroughly organized now for the purpose of inspecting cattle and by proper measures to prevent the spread of cattle diseases. What would be more appropriate and practical than to add to this department an inspection of beef-cattle; inspectors to be stationed at all prominent points where slaughtering is done and all to work under one general system, having for its object fair impartial, but rigid inspection of all animals to be slaughtered. Is not this the readiest solution of the present alleged problem of careless inspection?

THE PURE FOOD FIZZLE.

By the way, what has become of the "movement" of the retail grocers which has been fondly held up to the public every winter for the past few years as a "Pure Food" agitation? Congress will meet immediately, and it is time the annual pretense was set in operation, or some of our retail demagogues will have no opportunity of getting their names into print as would-be benefactors of humanity. It is interesting to note the series of personal fizzles that this fictitious movement has precipitated. First, there was the Philadelphia lawyer who advertised himself as a "Society," and endeavored to get people to subscribe to him, and to support him generally as a philanthropist. He fizzled out at the first flicker. The public might have tolerated him, at a distance, but they were appalled when they found out that a dollar's worth of membership in the pretended society involved the penalty of a year's receipt of his alleged newspaper. That wound him up off-hand. Then there was the New York newspaper man, whose quill was steadily adjusted to coincide with the retail grocers' stream, and who was possessed of a chronic mania for "organizing." What mighty schemes he piped forth during a few months of frantic effort, and with what ridicule he enveloped himself and all his associates! He likewise "petered out," and with his Philadelphia colleague evaporated into the pure food limbo. Then, too, there was a curious assortment of "leading merchants" who engineered the "movement" in Washington, and by their outspoken efforts to direct it in furtherance of their selfish, personal interests, drove out of the convention last winter all the disinterested members in attendance. They also have passed out of public notice in that special relation, and presumably will remain out. Even the newspapers, which a few months ago were in closest relationship to the effort, repudiate it now. The *Commercial Enquirer* of this city asked recently: "When will the pure food movement move?" The *Merchant's Mail*, of Albany, gives the following hopeless response: "A good many people will wait until Gabriel blows his trumpet before they see the pure food movement *move* unless some kind of a cathartic dose is given some of the men that are running it now. As it now stands it is a disgrace to the retail trade of the country. *Thirty-five* retailers in the United States are members of it. This speaks well for the confidence that the retail trade of the country have in Messrs. Callahan, Ward, Burgess and Gude, whom we believe are now running this show."

HYDROPHOBIA EXPLODED.

Dr. Charles W. Dulles, of Philadelphia, claims the gratitude of the community for having exposed, as he believes, the utter groundlessness of the popular superstition which calls a series of peculiar symptoms hydrophobia. He presents his facts in such a comprehensive and convincing manner that the most ignorant can understand them, and have all their fears forever set at rest. The greatest possible publicity should be given to these statements. Dr. Dulles declares that the Pasteur method of treatment seems to be in a fair way to die a natural death. Statistics show that the Pasteur method has had no effect in reducing the number of deaths from this supposed cause, and that the number of those who fall into the terror of hydrophobia in France, notwithstanding the stimulus given by the Pasteur method, is diminishing, as it has in Germany and America. In the State of Pennsylvania there has not been one case of even suspected hydrophobia in over a year, and in the whole of the United States during the past year there were only fourteen deaths, or about one in each four millions of inhabitants. Very few of these cases have ever been published or discussed in the medical journals, but mostly all are found in the daily newspapers. It was very difficult to obtain reliable facts about these cases, but wherever Dr. Dulles succeeded in getting accurate accounts the cases lost many of the features of

hydrophobia. After enumerating all the facts obtainable in each of these cases, he sums up the result in the following terse manner: The points which have impressed him most are that the effect of anticipation of hydrophobia was present in nearly all of the cases reported; there was a complete lack of evidence of rabies in the animal which did the biting; the effect of a physician's diagnosis of rabies on the mind of the patient. The water test was probably applied in all the cases. Canine symptoms, such as whining, howling, snapping and biting at attendants, were present in five of the cases. Forcible restraint was applied in eight cases. Powerful narcotics were used in all cases. Therefore, the conclusion is that hydrophobia is not a specific inoculable disease. But that people sometimes fall into a peculiar state after a dog bite and die in due time cannot be denied, but that this is attributable to any specific virus in the dog's saliva is erroneous, because the same thing has occurred too often from other causes. It is certain that the rejection of the specific theory will do more to banish hydrophobia from the world than anything else. The word hydrophobia should be used only to describe a condition—and not a disease—just as the word convulsions is used. Dr. Dulles expresses the opinion, in conclusion, that the belief in hydrophobia will follow the belief in witchcraft, which once had the support of Church and State, of the medical profession and laity, but which now torments our fellow men no more. The fact that freedom from the thraldom of these superstitions is accompanied by freedom from their curse proves conclusively that the former has some causual connection with the latter.

THE MONOPOLISTIC BUTCHERS' LAST DITCH

From the time that the high prices charged by New York and other Eastern beef slaughterers for inferior meat encouraged the establishment of the now gigantic dressed beef industry in Chicago, a vigorous fight has been maintained against that source of supply for the purpose of keeping the old monopoly in power. At first the attempt was made to coerce retail butchers into obtaining their beef from local slaughterers, by means of a league that cut off from local mutton and veal supply every retail butcher who dared to sell Chicago dressed beef. That device soon came to naught, as the retail butchers were promptly supplied from Chicago with veal and mutton as well as beef, and the local slaughterers of those meats in self-defence had to rebel against the league. Then resort was had to wilful misrepresentation of the quality of the Chicago beef, with a view to exciting against it utterly unfounded prejudices in the minds of consumers. A semi-moribund little paper called the *Market Journal* was brought out, changed in name to the *Butchers' Advocate*, and made the New York organ of the Eastern slaughterers. Control was also gained of three or four other publications of like obscurity and lack of character in other parts of the country. Among these organs a merry-go-round of mendacity was organized; each originating such slanderous stories about Chicago beef as were within its ability for invention, and the others copying the tales as "authentic corroboration" of their stories. By gratuitous distribution these papers were put before consumers. Occasionally a paper not in the ring would publish one of the stories as "sensational matter," without information as to it falsity, and the article so accidentally copied would be re-copied back into the papers of the ring with an audacious credit of its authorship to the outside journal. The game was a safe one, for the organs—both the avowed and the unavowed ones—had for regular subscribers only the few interested in the end served by the fraud, and reputed journals did not bother themselves to expose the trick, even if they noticed it. With all their endeavors, the men interested in retaining their clutch upon the purses and stomachs of the public, have notably failed to mislead consumers or to arrest the progress of the Chicago dressed beef enterprise, which has demonstrated itself worthy of confidence and support. An article in another column puts plainly the reasons—which must upon presentation be clear and convincing to every one—why the beef supplied from Chicago is the best, and can be sold at less prices than the monopolists formerly maintained. Failing in all else, the antagonists of Chicago dressed beef are now seeking legislative aid in their nefarious scheme, asking the enactment of a law requiring local inspection of live cattle at the points where they are to be slaughtered for food, and forbidding the sale of meat that has not been so inspected at the point where it is offered for sale. If they could have such a law passed, it would, of course, cut at once off the supply of Chicago dressed beef from all eastern markets, and the monopolists would again be happy in the power to charge just what prices they chose and supply any quality of meat they saw fit, confident that "this or none" would be law for the consumer. To this end they announce that they are going to awaken the sympathies of an United States Senate Investigating Committee by representations that "10,000 butchers have been forced out of business by the Chicago dressed beef syndicate." That averment being made by them is probably not true, but even if it is the interests of several millions of consumers are decidedly more important for consideration than those of even 10,000 butchers.

The representations of the *Butchers' Advocate* and its Hessian colleagues, concerning the unworthiness of Chicago dressed beef, suggest the answer to the boy's riddle. He said: "That woman is my mother, but I am not her son." The only correct answer is: "The boy lied."

WHICH IS CORRECT?

According to the Boston *Transcript* the Rev. Mr. Schleyer, inventor of Volapuk, is surely alive, notwithstanding that his obituary notice has recently gone the rounds of the press of this country. The evidence is a German postal card received in a European mail bearing the words in free autograph, "I live. Schleyer, J. M., inventor Volapuka. Konstanz, 1888, 10, 30," Printed on one end of the card are a number of renderings in different tongues, including Volapuk, of the sentiment, "Unam uni generi humano linguam," and under them, "Schleyer's weltsprache-Zentralburo in Konstanz a B., Baden." Father Schleyer is a native of Konstanz and a retired Chatholic priest.

ALCOHOL AND CRIME.

Some figures with reference to acoholism and criminality were recently communicated to the French Academy of Medicine. They referred to an examination of 3,000 condemned persons, and it appears that 79 per cent. of the vagabonds and mendicants were drunkards, 50 to 57 per cent. of assassins and incendiaries, 53 per cent. of persons convicted of outrages on morals, 71 per cent. of thieves, sharpers, etc. In acts of violence against the person, 88 per cent. were found to be drunkards; against property, 77 per cent. Among youths under 20, drunkards were nearly as numerous as among adults, the difference being only 10 per cent. Of these youths, 64 per cent. were addicted to drinking. An examination of the departments showed the largest number of drunkards from the regions where spirits are most largely consumed.

Effect of Electric Light on Skin.—A number of cases are now on record of effects produced by the electric light identical with those resulting from prolonged exposure to strong sunlight. At the Creusot iron works the skin of the workmen becomes reddened and tender, and this is followed by desquamation. The eyes became painful and suffused, and the retina, notwithstanding the use of very dark glasses, lost its sensitiveness, and the visual images appeared for some time after to be tinged saffron yellow. As a result of some inquiries, it appeared that a current of intensity exceeding 200 amperes is liable to give rise to the preceding symptoms. The occular symptoms are occasionally somewhat alarming, but they are fortunately characterized by a tendency to prompt amelioration.

CHICAGO BEEF THE BEST.

WHY IT IS MEET TO METE OUT HEARTY COMMENDATION TO SUCH MEAT.

Is there any occult reason why retail meat dealers and meat consumers should consult the interests of local beef slaughterers in preference to their own? None is readily apparent, yet it seems to be an article of faith among the slaghterers that something of the sort exists. They assume a prescriptive right to dictate what meat shall be consumed and what prices shall be paid for it. The assumption is preposterous. Nothing in their past or present service to us entitles them to such authority. Experience has demonstrated that we have been able to get much better and cheaper beef from Chicago, dressed there, than was obtainable from local slaughterers, not only here in New York, but all over the country. Except, perhaps, a sentimental attachment—such as an eccentric traveller might feel for the individual highwayman by whom he was accustomed to being robbed—what reason can we have, in these times, when intelligent economy is necessitated by the conditions of our common struggle for existence, for choosing to pay exhorbitant prices for an inferior article of food, when a superior one is obtainable at reasonable figures? The mere consideration that a certain class of our citizens will be still further enriched by our doing so, does not warrant such unwisdom. Of course, the persons interested in preventing the public consulting its own interest in this matter, are loud in their denials of the contrasting facts just stated concerning the beef supply, but the facts are facts all the same. When they can prove that fire is cold, that ice is hot, and that twice two are seven, they will be in a fair way for demonstrating that the bulk of locally Eastern dressed beef is better than that supplied by refrigerator cars from Chicago, but not until then. It will be readily admitted that a steer of proper age, well reared and fattened within ten or twenty miles of the place of slaughter, leisurely driven in to a clean abbatoir, killed and dressed in a proper and cleanly manner, kept for a week in a temperature of 38° to 40° and then put upon the market, would be ideally good meat. But is anybody insane enough to suppose that such animals supply one fifty-thousandth of our New York dressed beef? or indeed of any considerable local beef consumption in the East. If so, that person will be capable of seeking a cattle ranch in the Bowling Green and looking along Wall Street for abbatoirs. The cattle for the country's consumption come from Texas, Colorado, Montana, Kansas, perhaps in limited quantities from Iowa, Minnesota, Illinois and Missouri. Land in the Eastern and Middle States is too valuable for other purposes, to permit there successful competition in grazing with the far West.

Now what would have been the conditions that gave such peculiar excellence to that ideal steer—supposing he had existed? 1. He was in good condition and subjected to very little travel. 2. He was properly killed and kept before being put upon the market. Are those conditions common to Eastern dressed beef? No; they are absolutely non-existent in that supply. The distance whence our live cattle come has been stated. Wild as deer upon the plains where they have been reared, they are forced into railroad cars, for a journey of two or three weeks' duration, under such strange conditions as fill them with constant terror. They are necessarily packed in as closely as they can stand together—fifteen to seventeen in each car—for if one of the poor exhausted brutes has room enough to lie down it will never rise again but will be trampled, mangled and perhaps killed by the others. If two fall, the others are tossed to and fro by the motion of the cars, and more are thrown down. Those that stand longest, fight madly at times, and at other times plunge upon and gore the fallen ones. When they reach the end of their long journey, it is not rare to find among them broken limbs, horns knocked off and eyes torn from their sockets or smashed. Those less severely injured are covered with

painful bruises, in which the blood has settled and turned black. The animals in best condition have lost much in weight, are fevered, and, to make them fit for human food, should be turned loose in a pasture for at least a week or ten days, to restore their calm and dissipate the fever in their blood. But this is never done. Their meat is wanted for the next day's supply probably, certainly for the second day, so they are hurried to the slaughter house—the agonized brutes that have been maimed being sent to the knife with special dispatch. The atmosphere of the slaughter house is heavy with the foul odors of blood and decomposition. Often at the first sniff of it the doomed animals become actually frenzied with terror. All ruminant animals have the intensest horror of blood. Here there is a surfeit of blood. They not only smell it, but see it everywhere; splashed in pools upon the floor, dabbled on the walls,smeared upon the clothing, dyeing the hands and even spattering the faces of the executioners. Around a hind leg of a steer is thrown a noose, at the end of a rope that runs up over a pulley and down to a windlass. Before he realizes what strange thing has happened to him, he is being dragged backward, pawing, scraping, struggling, sometimes bellowing in his fright. As soon as he is hoisted, dangling by that leg, helpless, a man thrusts a sharp knife into his throat; the blood pours down off his muzzle; his wide-dilated eyes slowly glaze and merciful death comes to his release. When they drag him to one side and open him, they find his heart engorged and black blood standing in all his fevered veins. That blood is very hurtful. It is full of the refuse of the animal's system—excrementitious matter. The least injurious blood, the arterial, has been drained off pretty well, but a large part of the venous remains. In a few hours that animal, quartered, will be one of a pile on a huge wagon going down to the market to be sold, before the animal heat is thoroughly out of the meat. It would be interesting to know what, in all that, gives such dressed beef any points over any other beef.

By way of comparison, to learn if Chicago dressed beef is likely to be any worse or any better, let us see by what successive steps it gets to New York consumers. Of course, the percentage of it obtained within comparatively short distances from the place of slaughter is very much greater than could be got within a like radius about New York, but the bulk of it has to come from the distant States and territories whence our supply is drawn. The very important fact has to be borne in mind that Chicago is one thousand miles nearer to the sources of production than New York is, which shortens by one-half the fear-inspiring and exhausting ordeal of the journey for live cattle. Furthermore, the reduction cuts off that part of the travel that is hardest for them to bear, when sleeplessness, fatigue, fever and bodily injuries through actual violence have made them least capable of endurance. They reach the great stock-yards at Chicago in good condition.

In the desperate endeavors made here in New York to excite prejudice against Chicago beef, resort has even been had to demagogic howls against the Chicago stock-yards as the enterprise of a "monopoly." Well, whether monopolies are good or bad things in the abstract, and whether a Chicago stock-yard monopoly, or a New York slaughterers' monopoly is most obnoxious, are not live issues at present. The question under consideration is simply whether that institution, monopoly as it may be, furthers or hinders our getting the best quality of beef at the lowest practicable prices. That it is a furtherance of that end does not admit of question. The Union Transit Company, owning the stock-yards, controls absolutely all receipts and sales of cattle in Chicago, and has adopted for the traffic such regulations as, while serving its interests, of course, are really protective for consumers. Thus, for instance, no cattle can be sold there except through a broker, and no broker can sell except upon the weights furnished by the company's officers, which weights are never taken until the animals have been fed and watered. Feverish cattle and those that are not in good condition will not eat, and time must be given for them to regain their normal condition. The lowest time that cattle can be pushed through the stock-yard stage of their progress from the ranche to the table is twenty-four hours, and this, if the slightest reason therefor appears, may extend to several days. Then there is a rigid inspection by reliable officials, that prevents any diseased or injured beast being sent to the slaughter house for conversion into human food. Up to this point, it will be observed, nature, geographical limitations, and the interests of outside parties not concerned in the slaughterers' results, all conspire to land the animal in the Chicago abbatoir in better condition to be converted into good food than it is reasonable to hope that he could reach a like point in New York. From this point on, all depends on the skill and care with which the converting of him is done. In either of the large slaughtering establishments, Swift's or Armour's, the processes may be said to have attained perfection. Let us review them briefly, as noted in the former concern.

Each beast for slaughter is driven into a narrow separate pen, the cleanest place he was ever in, where there is no sight or scent of blood to alarm or excite him. A man, standing upon a board-walk above, stuns him by a blow, delivered with a heavy sledge, upon his forehead. The concussion causes an abnormal rush of blood to his head and neck. Before he regains consciousness he is drawn out on the "bed" of the slaughter house, is hoisted by a chain attached to his hind legs, his fore legs are spread wide apart, and one powerful slash with a long keen knife cuts through his neck almost to the back-bone, so that his head seems to be nearly severed. The blood gushes out in a torrent, draining both arteries and veins. The utmost care is taken that this shall be thoroughly effected, as upon it depends, in great measuse, prevention of the tendency to decomposition that is inevitable where the blood is left standing among the muscular tissue.

In all the subsequent handling for removal of the intestines and other internal parts, skinning, dividing into halves, washing and drying—the details of which need not here be gone into—from the time that the beast is first hoisted up until he is finally stowed away in the cooler, his flesh never touches the floor, and of all the forty-two men who handle him on the way, each doing some one particular thing, and all working with the regularity of machinery and the speed of lightning, not one has laid a dirty finger upon him. There seems to be an almost morbid fear of harboring somewhere about the place germs of decomposition that might taint the meat. The first element of security attained, that of thorough draining out of the blood, is shown by the condition of the meat and by the fact that the heart, when taken out, is always found to be perfectly empty. But that is only the beginning. The men whose department of the necessary handling compels them to get blood on their hands, must wash them instantly at the spouting hose held near them, and never touch a stained finger to the meat after it has been washed. Not only is the blood run down out of sight to the floor below, where it is instantly put into treatment for conversion into a valuable fertilizer, but every spot that is spattered on the cement floor is immediately washed down with constantly pouring streams of water. The men are required to keep their bodies perfectly clean; must change their clothing entirely at every resting spell—to facilitate which a laundry is maintained in constant operation in the slaughter house, and practically, unlimited supplies of working clothes are provided—and so rigid is the enforcement of absolute cleanliness that Mr. Swift has been known to order a man off to change his shirt, in the middle of his work, because he had got a single drop of blood on the sleeve of the one he was wearing. All odors that might prove deleterious and all dirt of every kind are forbidden; so smoking tobacco or cigars, and the chewing of tobacco are tabooed; and a man with one of these high-proof, barbed-wire whiskey breaths would be promptly "fired out" from the slaughter house.

The meat having been carefully trimmed, freed from all ragged edges, and even suspicions of bruises, and very carefully washed and dried, is hung in the refrigerators, in a temperature of 38 degs. F., where it remains forty-eight hours. Then it is shipped in refrigerator cars, at the same temperature, to all the cities and towns in the Middle and Eastern States, enabling everywhere an amply supply of the best beef in the market at such prices as never prevailed prior to the introduction of this service, far below those commanded wherever local slaughterers monopolize the business. At least a week elapses from the time of slaughter until the meat reaches a market at so remote a point as New York or Boston, so that it is upon arrival in perfect condition for the table; but meat thus refrigerated, after such elaborately careful preparation to keep it sweet, can be kept out of refrigerators then for two days, even in the very hottest weather, and still be perfectly sweet and good, or it may be kept for an indefinite length of time at a moderately low temperature. That it withstands conditions that would be ruinous to meat prepared as is customary in New York, or nearly all other local slaughter houses, is sufficiently demonstrated by the unexceptionable excellence it uniformly shows in the remote English markets to which it is regularly shipped.

Enough has been said to show to any intelligent and disinterested person the great advantages possessed by the Chicago dressed beef in point of quality. That it is cheaper than New York dressed beef any one may satisfactorily ascertain by comparing its prices with those demanded by New York butchers for what they are pleased to offer as the latter, but which, in reality, is very generally the former. The reasons why it can be profitably sold at lower prices in this market than real New York dressed beef, are as cogent as any of those given for its being better. Primarily, freight is saved on the enormous amount of offal and refuse in the live animals. Carrying all that stuff a thousand miles costs a great deal. Then all that is convertible into fertilizing material—and the blood is especially valuable for that use—is saved and worked up at the Chicago slaughter houses, where it is within easy reach of a market for all of it that can be produced. The hides command a higher price—owing to the care exercised in getting them off and handling them—than green hides do in the East as they are furnished from our slaughter houses. The cattle have lost much less in weight at the time of killing than they would have through 1,000 more miles travel. The cost of ice for the refrigerator cars is offset by the expense and delay of caring for live stock. Finally there is that inevitable reduction of the ratio of expenditure to production that inheres in all vast businesses and gives them so powerful an advantage over small concerns. Fortunately for meat consumers, Chicago dressed beef has "come to stay."

DOMESTIC DIETETICS.

SPECIALLY PREPARED, FROM PRACTICAL TESTS, FOR THE LADY READERS OF THE "AMERICAN ANALYST."

SEASONABLE FOOD.
November.

MEATS.—Beef, mutton, ham, kidneys, liver, venison, sausage.

GAME AND POULTRY.—Grouse, hare, pigeon, partridge, quail, chicken, duck, turkey, rabbit, goose.

FISH.—Bass, blackfish, bream, clams, cod, crabs, eels, carp, catfish, flounder, halibut, herring, lobster, mackerel, mussels, oysters, perch, porgie, prawn, rockfish, salmon, sturgeon, smelt, turtle, whitefish.

VEGETABLES.—Artichokes, beets, beans, broccoli, Brussels sprouts, cabbage, carrots, cauliflower, egg plant, garlic, lettuce, onions, parsley, parsnips, potatoes, savoys, shallots, spinach, squash, tomatoes, turnips.

FRUIT.—Apples, bananas, grapes, oranges, pears, pineapples.

PRACTICAL RECIPES.

PARTRIDGE SOUP.—Skin and cut up two partridges, cut a handsome slice of ham as lean as possible, and divide it in four, or cut as many thin slices, put them in the pan, add the partridges with an onion sliced, some celery, and four ounces of butter, brown nicely without burning, put them into the stewpan with three pints of water, throw in a few white peppers whole, a shank of mutton, salt it to palate, strain, add stewed celery, fried bread, and, previous to its boiling, skim very clean and serve up.

TO CLARIFY SOUP.—Add to each gallon of cold soup the shells and whites of two eggs beaten up with a little cold water. Put on the fire and simmer for twelve or fifteen minutes, skimming meanwhile; strain through a flannel cloth.

FILLETS OF FLOUNDER.—Take off the fillets of a good-size flounder, skin and flatten with the blade of a knife, salt and pepper, roll in flour, egg and bread-crumbs or cracker-dust, then fry, and dish up with tomato-sauce around them.

STEWED CHICKEN.—Cut a fowl into pieces; put them into a stewpan with butter, seasoning with salt and pepper, a grain of garlic, a bunch of parsley, thyme and bay leaf; brown on a moderate fire. While cooking besprinkle with a pinch of curry powder, add sufficient broth and the juice of a lemon. Strain the gravy, pour it over the chicken and serve with boiled rice.

CARROTS.—Wash and scrape several good carrots, scald them, drain, and cut into long, slender pieces. Put the pieces into a stewpan or saucepan, with a piece of fresh butter, some finely-chopped parsley, and sufficient milk to well moisten the whole, cook until completely tender; add one yolk of egg to thicken; more eggs must be used if the dish is a large one.

SPONGE CAKE.—Beat the whites of four eggs to a stiff froth and the yolks of the same till they are very thick. Add to the yolks one and a half teacupfuls white sugar and three tablespoonfuls cold water; after they are thoroughly mixed, add the whites and stir them well in. Now add to two teacupfuls sifted flour two heaping teaspoonfuls Horsford's Baking Powder; stir well, and sift again. Lastly, stir the flour so prepared into the sugar and eggs, and when well stirred in put immediately in a well-heated oven.

POTTED PEARS.—Take ripe pears, wipe them carefully; place a layer, stem upwards, in a stone jar, sprinkle over sugar, then set in another layer of pears, more sugar, and so on, until the jar is filled. To every gallon put in a pint and a half of water. Cover the jar close, and set in a slow oven two hours. It is a nice dish for the tea table, with or without cream.

CRULLERS.—Half a pound of butter, three-quarters of a pound of sugar, two pounds of flour, one nutmeg grated, half a teaspoonful of soda dissolved in half a teacup of water or milk, six eggs.

COFFEE CREAM-CAKE.—Make a delicate cup-cake, and bake in three layers. Boil one pint of milk, and add two tablespoonfuls of corn-starch dissolved in cold water, a small cup of sugar, and three well-beaten eggs, with half a cup of strong coffee. Boil up once, and put between the layers of cake, icing it with one white of egg into which a teacupful of powdered sugar has been stirred.

ANGEL CAKE.—Take one cup flour and put into it one heaping teaspoonful of Horsford's Baking Powder; sift the whole four times. Beat the whites of eleven eggs to a stiff froth, and then beat in one and one-half cups sugar and a teaspoonful vanilla. Add the flour and beat lightly but thoroughly. Bake in an ungreased pan, slowly, forty minutes. When done turn it over to cool; place something under the corner of the pan so that the air will circulate underneath and assist the cooling. Cut it out when cool.

PEANUTS.

THEIR ECONOMIC USE AND VALUE.

The peanut is a useful product—much more so, indeed, than people imagine, says the San Francisco *Chronicle*. We all know how extensively it is eaten in its roasted state, but therein, by no means, lies the extent of its value. The nuts contain from 42 to 50 per cent. of a nearly colorless, bland, fixed oil, resembling olive oil, and used for similar purposes. The best is obtained by cold expression, but a large quantity of inferior oil is procured by heating the seeds before pressing. It is a non-drying oil, changing but slowly by exposure to the atmosphere, and remaining fluid in a cold several degrees below 32 degs. Fahr. It contains, beside oleic and palmitic acids, two other oily acids, which have been called the arahic and hypogœic, though it is doubtful if they are really distinct. The principal consumption of the oil is in soap making.

In 1883 Virginia began the manufacture of peanut flour, the result being a peculiarly palatable biscuit, while Georgia has long made pastry of pounded peanuts. The kernels roasted are largely used in the manufacture of chocolate, while the amande de terre, as has been shown, is used by the confectioners. It is also eaten as a fruit, and roasted for coffee. "The poor man's fruit," the peanut, is capable of sustaining life for a long time, owing to its peculiarly nutritive qualities, the negroes using it alike in porridge, custard, or as a beverage. Nor does its usefulness end here, for the vines form a splendid fodder, as good as clover hay, while hogs will fatten on what they find in the fields after the crop has been gathered. It is an easy crop to raise, the demand for nuts has trebled within the past few years, and has never yet equalled the demand. The quantity of peanuts used in this country may be set down at 3,000,000 bushels.

ADULTERATION.

HOW THE MASSACHUSETTS LAWS DEFINE IT.

According to the Massachusetts Adulteration Act, an article of food is deemed to be "adulterated" within the meaning of the act:

1. If any substance or substances have been mixed with it so as to reduce or lower or injuriously affect its quality or strength.

2. If any inferior or cheaper substances have been substituted wholly or in part for it.

3. If any valuable constituent has been wholly or in part abstracted from it.

4. If it is an imitation of, or is sold under the name of, another article.

5. If it consists wholly or in part of a diseased, decomposed, putrid, or rotten animal or vegetable substance, whether manufactured or not, or in the case of milk, if it is the product of a diseased animal.

6. If it is colored, coated, polished, or powered, whereby damage is concealed, or if it is made to appear better or of greater value than it really is.

7. If it contains any added poisonous ingredient, or any ingredient which may render it injurious to the health of a person consuming it.

USEFUL TABLE.—The *Universal Tinker* gives the following table showing the capacity in gallons for each foot of depth of cylindrical cisterns of any diameter, which may be of value to some of our readers:

Diameter.	Gallons.	Diameter.	Gallons.
25 feet	3,059	7 feet	239
20 feet	1,095	6½ feet	206
15 feet	1,101	6 feet	176
14 feet	959	5 feet	122
13 feet	827	4½ feet	99
12 feet	705	4 feet	78
11 feet	592	3 feet	44
10 feet	489	2½ feet	30
9 feet	396	2 feet	19
8 feet	313		

THE ILLS OF OLD AGE.

The seven ages are but a pretty fiction of the poet's mind; there are in reality but two periods in a man's life, youth and age. One is the upbuilding of the individual and the other his decay. Upon the basis of the psalmist, three score and ten years, the man develops for thirty-five years and for thirty-five years withers away. Upon the basis of science, the rule is somewhat different. The growing period may be lessened by climate, disease, dissipation, or heredity, in which case the decaying period is lessened, although not to a corresponding extent. Thus, the Italian girl—who matures at nine or ten years of age, marries at eleven, and is a mother at twelve—is gray at twenty-two, and an old woman at thirty. The young man, who plunges into fast living at eighteen, and is blasé at twenty-five shows signs of senility before he is thirty-five. On the other hand, the growing period is easily lengthened by right living, exercise, fresh air, sunlight, and intellectural work. Chevruiel, the great chemist, Gladstone, Bismarck, and Von Moltke are apt illustrations of this great law.

Just as a pendulum is at rest when it reaches the end of its beat, so at the point when growth ceases there is a brief period of equilibrium. The parallel goes even further. As the pendulum begins to swing, its motion is first very slow, and only by degrees does it become rapid. So the tendency to decay is very slow in the beginning, so slow as to be inappreciable. Only after forty with the woman and forty-five with the man does its progress become patent.

It is by utilizing these facts that science has begun to prolong life and deprive senility of its terrors. Whoever will apply the rules laid down by modern physiology and medicine will be rewarded by greater happiness and a longer span of years. The rules are extremely simple.

The first is, avoid all excess as far as possible. What constitutes excess depends upon the individual. The principle applies to the emotions and intellect as well as to the body. Extreme grief, joy, fear, rage, jealousy and excitement are attended with danger.

The second rule is the regular exercise of all the functions, physical and mental. The richest merchant and the poorest ploughman should employ his muscles in a normal manner every day, and devote a portion of his time to mental improvement and light diversion.

The third rule is to take the best care of the vital functions. With the progress of years, stomach, liver, kidneys, and bowels lose their prestine force and no longer do their work as they once did. As a result, he impurities which in youth were rapidly dispelled or destroyed, gradually accumulate and finally bring about disease. Sometimes they express themselves in dyspepsia or gastric troubles, in Bright's disease or dropsy, in hepatic ailments, in constipation or enteric disorders. These mean suffering, sorrow, and, too often, death. To prevent this unpleasant result, the blood must be kept pure, and the vital functions in good tone and order.

The most effective way whereby this can be accomplished is in the regular use of Ayer's Sarsaparilla. The best blood purifier known to modern science, it dispels every humor from the system and restores every organ to a condition of health. There are other scientific preparations which are of value in specific diseases, but which can be safely used only under the instructions of a skilled physician. Ayer's Sarsaparilla can be used by all alike with benefit to the user. For the old, it is of particular value. It enables them to preserve their health, and thus extend their years beyond the allotted term.

SUBMARINE WARFARE.—A submarine boat, invented by M. Ramazoti and intended to revolutionize naval warfare, was launched at Toulon, France, recently. The boat is so constructed as to be able to dive beneath the keel of the largest ironclad, fastening at the same time by means of a special apparatus, cartridges to the side of the enemy's vessel, which are exploded by means of a steel wire charged by electricity. This new engine of destruction combines all the requisite conditions of speed, steering capacity, submersion, immersion and habitability. Reservoirs of compressed air allow renewed air for breathing.

BUSINESS NOTES.

ALDEN'S CYCLOPEDIA.

One of the several advantages possessed by Alden's manifold cyclopedia is its handy shape, which enables it to be easily held for reading, while the size of the pages is just what is desirable for convenience of perusal. These are not the only merely mechanical advantages the book offers, but, admirable as they are, they are excelled by the satisfactory character of the contents of the work, which renders it in every respect as desirable for purposes of reference as any one of its more pretentious rivals. The eighth volume, just published, comprises between the titles "Ceylon" and "Clubfoot" several hundred pages of information on every subject included in that alphabetical limit, thoroughly discussed, though skillfully condensed, and profusely illustrated. At its low price this work should be in every family book-case in the land.

GOURMET OIL.

We are informed that this justly-celebrated olive oil may now be purchased by the single bottle of James Lidgerwood, 835 Broadway, New York. Arrangements are being made to have the oil on sale at all leading grocers. The importer is Frank La Manna, 57 Beaver Street, who also imports the "Billet" sardines and Lemarchand's boneless sardines.

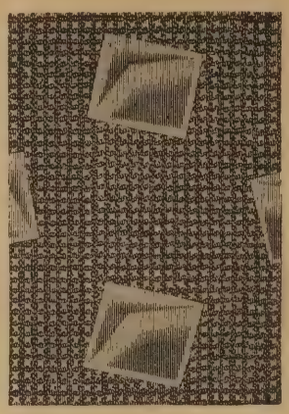
KINGSFORD'S STARCH.

It is pretty hard work to displace an old favorite in public esteem. One of the oldest and best-known starch factories in the United States is the Oswego starch factory, who manufacture the celebrated T. Kingsford & Son's starch. This brand has always commanded the highest prices, and needs no indorsement from us. The ladies of the land all know it, and show their appreciation by their preference.

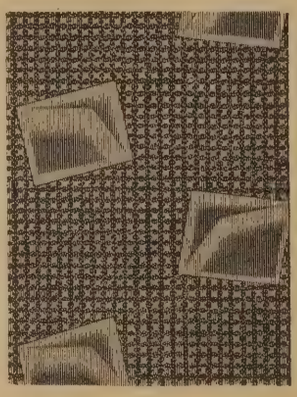
BEFORE AND AFTER.

PEARLINE TESTED IN A PRACTICAL WAY.

Some time since we promised to furnish two illustrations showing a cheap material as it appeared when new, and again as it looked after having been washed weekly for a year with Pyle's Pearline. As seeing is believing, further comments are unnecessary.



WHEN NEW.



AFTER 52 WASHES.

BINDERS FOR THE AMERICAN ANALYST.

We have selected the "Handy Binder" for binding the ANALYST, because of the following advantages: It is elegant in appearance, strong, durable and this new method of binding allows the opening of the pages perfectly flat, owing to the fact that none of the side of the paper is used. This method also permits the taking out and replacing of one or more papers from any part of the file without disturbing the other parts. After the file is completed, it ceases to be a temporary binder, and with its contents becomes a perfectly and strongly bound book. Owing to the unusual size and strength of the linen binding cord in combination with two metallic binding strips (loops) the strength and durabi ity of the binding is wholly unequaled by any method yet introduced. Price, sent post-paid, 75 cents. To any subscriber renewing his subscription at $1 sent directly to this office during December, 1888, we will send one for 25 cents, and we will give one free as a premium for every new subscription sent to us with $1.

HORSFORD'S ACID PHOSPHATE.

IN BILIOUS DISEASES.—Dr. D. Schaub, Munce, Ind., says: "I have used it in cases of bilious disease, and the results were all that could be desired. It is valuable.

AN INVALUABLE AID.

Good penmanship can only be attained by practice, patience and perserverance. Esterbrook's pens are an invaluable aid.

VALUE OF SHAVING.—It is estimated that there are 3,000,000 men in America who get shaved three times a week. That means an expenditure of thirty cents a week, or $15.60 a year for each man, or for the 3,000,000 about $46,800,000 annually.

MEANING OF SIZE.—A "size" in a coat is an inch; to underwear, it is two inches; in a sock, one inch; in a collar, one-half inch; in a shirt, one-half inch; in shoes, one-sixth of an inch; in pants, one inch; in gloves, one-quarter of an inch; and hats, one-eighth of an inch.

LOOK OUT for Imitations and Substitutes

OF

Horsford's

ACID PHOSPHATE.

A variety of imitations and substitutes of this standard preparation have appeared under the name "Acid Phosphate," or a similar title, all of which differ materially from the genuine article.

Be sure the name **"HORSFORD'S"** is on the label. No other genuine.

N. D. ARNOLD, TREAS.

Providence, R. I.

Rumford Chemical Works.

CALIFORNIA

Fine Table Wines

From our Celebrated Orleans Vineyard.

Arpad Haraszthy & Co

Producers of the

ECLIPSE

CHAMPAGNE,

530 Washington St.

SAN FRANCISCO.

PARK & TILFORD. New York, C. JEVNE & CO., - - Chicago, } Agents.



BLAIR'S PILLS

Great English Remedy for Gout, Rheumatism and Kidney Complaints.

Sure, Prompt and Effective. Oval box 34, round box 14 pills. At all druggists, and 224 William St., New York

YOU CANNOT OBTAIN THESE GOODS



Excepting by being measured at one of our stores or sending your order by mail. The **reputation** of these justly celebrated goods is now so widely known in every State in the Union that we have only to keep plainly in the public view, directions how to obtain the

FAMOUS CUSTOM-MADE

PLYMOUTH ROCK $3 PANTS.

Suits cut to order $13.25.

Overcoats cut to order $12.00.

1. "Only a postal card" sent to our Boston store, **provided you MENTION THIS PAPER**, brings by return mail 20 samples cloth to select from, self-measurement blanks and a linen tape measure. 2. But *if you have not time* to wait for samples, tell us about the color preferred, with **waist, inside leg** and **hip** measures, remit $3, together with 35 cts. to cover cost of expressage or postage, and we will forward the goods prepaid to any address in the U. S., guaranteeing safe delivery and entire satisfaction or money refunded.

ONLY A POSTAL CARD

Remember that for any cause we refund money at buyer's request upon return of goods, or make alterations on new garments **free of extra charge.**

Address all mail to **Boston Store.**

PLYMOUTH ROCK PANTS CO.,

18 Summer Street, Boston, Mass.;

285 Broadway, New York;

Burnside Building, Worcester, Mass.

A letter from the American Express Co. (capital $20,000,000) about our standing and business methods may be obtained by writing to them at Boston.

HORTON, CATO & CO.'S



"ROYAL" SALAD DRESSING.

The best prepared Dressing, always fresh, does not turn oily, rancid or decompose as other dressings of a similar nature.

"ROYAL" WORCESTERSHIRE SAUCE,

The Peer of American Product.

HORTON, CATO & CO.,

SOLE PROPRIETORS AND MANUFACTURERS,

DETROIT, MICH.

FACIAL BLEMISHES.



The Largest Establishment in the World for their Treatment. Facial Development, Hair and Scalp, Superfluous Hair, Birth Marks, Moles, Warts, Moth, Freckles, Wrinkles, Red Nose, Acne, Pimples, Black Heads, Scars, Pitting, etc., and their treatment. Send 10 cts. for book of 128 pages, treating on 25 skin imperfections, 6th edition revised and illustrated.

Dr. JOHN H. WOODBURY,

210 West 42d St., New York City, N.Y.

Inventor of Facial Appliances, Springs, etc. Six Parlors; three for Ladies. Established 1870.

Ask Grocers for our Patent Barley **CRYSTALS**, a new, unrivalled **Cereal Food**, for Breakfast Tea & Dessert. If not sold there, write us for free samples. **GLUTEN FLOUR** and **SPECIAL DIABETIC FOOD** are invaluable waste-repairing flours for **Dyspepsia, Diabetes, Debility & Children's Food.** No bran; mainly free from starch. For all family uses nothing equals our **HEALTH FLOUR.** Send for circular offering 4 lbs. free.

FARWELL & RHINES, Props., Watertown, N.Y

ESTABLISHED 1823.

ALEX. YOUNG CO., Limited,

DISTILLERS OF

Y. P. M. WHISKIES.

DISTILLERY, - - - Nos. 408, 410, 412 and 414 South Street.

MALT HOUSE, - Nos. 416, 418, 420, 422 and 424 South Street.

STORE, - - - - - - - - - - No. 700 Passyunk Avenue.

PHILADELPHIA, PA.

New York Office, - 78 Wall Street.

FOR SALE BY

PARK & TILFORD, and ACKER, MERRALL & CONDIT.

A GOOD INCOME.

We have enabled several gentlemen and ladies to add largely to their incomes by paying them liberal commissions on subscriptions, for this and other journals.

For further particulars address

AMERICAN ANALYST,

19 Park Place, New York.

LEA & PERRINS' SAUCE.

Lea & Perrins', the original and genuine Worcestershire Sauce, has been before the public over a half a century. Like all popular favorites it has long been the standard of comparison and the pattern for counterfeiters who not being able to imitate its excellence offer to the public imitations in bottling, labels and style of putting up. They dare not counterfeit the signature of Lea & Perrins which is on the red label of every genuine bottle, and of which this is a facsimile.

Lea & Perrins

To be sure of obtaining the genuine article, see that the above signature is on the label.

How is the Baby?

If properly fed, rosy cheeks and a joyous household are assured. There is no food so adapted to childhood as

RIDGE'S FOOD.

4 sizes, 35c. up. WOOLRICH & Co. on every label.

YELLOWSTONE NATIONAL PARK, PACIFIC COAST AND ALASKA.

The Yellowstone Park is unquestionably attracting more attention at the present time, as a tourist resort, than any other place on the face of the earth. This spot is reached by rail only by the Northern Pacific Railroad, the famous dining-car line to the Pacific Coast, the only one of the transcontinental lines running dining cars of any description whatever. A book ticket will be sold at the Eastern terminals of the Northern Pacific for $110, including rail and stage transportation, meals on dining cars, Pullman and five day's accommodations south of Livingston in the Park.

The Alaska tour is also one that is attracting wide attention. The rates and facilities offered for making this trip are better, via the Northern Pacific Railroad, than by any other line. The attractions offered *en route* via the Northern Pacific, such as the ride through the Lake Park region of Minnesota, by the great wheat fields of Dakota, along the Yellowstone River and Clark's Fork of the Columbia, through the famous Spokane Falls region, over the Cascade Range, by the Palisades of the Columbia, Puget Sound, etc., together with the superior accommodations offered, make a trip by this route especially enjoyable. By writing Charles S. Fee, General Passenger Agent, M. P. R. R., St. Paul, Minn., you will receive copy of "Wonderland" and other books descriptive of the Yellowstone Park, Alaska and the country in general traversed by the "Dining Car and Yellowstone Park route."

COLDEN'S LIQUID BEEF TONIC.

ORIGINAL LABEL: "Colden's Liebig's Liquid Extract of Beef and Tonic Invigorator."

AN INVALUABLE AID IN THE TREATMENT OF ALL CASES OF DEBILITY.

Established 15 Years. Endorsed by Scores of Physicians. Essentially Different from all other Beef Tonics. Beware of Imitations.

COLDEN'S LIQUID BEEF TONIC consists of the Extract of Beef (by Baron Liebig's process), spirit rendered non-injurious to the most delicate stomach by extraction of Fusel Oil, soluble Citrate of Iron, Cinchona, Gentian and simple aromatics. An official analysis of this preparation by the eminent chemist ARTHUR HILL HASSALL, M. D., F. R. S., and an endorsement by SIR ERASMUS WILSON, F. R. S., is printed on the label of each bottle.

Its Range of Action Embraces all Cases of Debility.

By the urgent request of several eminent members of the medical profession, I have added to each wineglassful of this preparation two grains of SOLUBLE CITRATE OF IRON, and which is designated on the label as "No. 1," while the same preparation, without Iron, is designated on the label as "No 2."

It acts directly on the sentient gastric nerves, stimulating the follicles to secretion and gives to weakened individuals that first pre-requisite to an improvement, an appetite.

☞ *I will, upon application, send a sample bottle of* ***Colden's Liquid Beef Tonic*** *to any physician in regular standing. Please ask your Dispensing Druggist (if he has not already a supply) to order it. In prescribing this preparation physicians should be particular to mention "COLDEN'S" viz: "EXT. CARNIS. FL. COMP. (COLDEN). It is put up in pint bottles and can be had of Wholesale and Retail Druggists generally throughout the United States.*

C. N. CRITTENTON, Sole Agent,
115 Fulton Street, N. Y.

Please Mention the AMERICAN ANALYST.

Good Agents

To obtain Subscriptions for

AMERICAN * ANALYST

WANTED ON LIBERAL TERMS.

KEITH'S
CON. TINC. AVENA SATIVA

(FROM COMMON OATS.)

WITHOUT ADMIXTURE OF ANY KIND.

A Powerful Nerve Stimulant, Tonic, Etc.

WAS FIRST offered to the medical profession by B. KEITH & Co., in 1881, as a remedy to be employed in the treatment of

Paralysis, Epilepsy, St. Vitus' Dance, the Morphia or Opium Habit, Chloral and Tobacco Habits, Sleeplessness, Nervous Debility and Exhaustion, Neuralgia, Alcoholism Painful and Deficient Menstruation, Headache, Hysteria, Impotency, Convulsions and Prostration from fainting, and in the Convalescent stage of all Acute Diseases.

DOSE.—From ten to thirty drops, or more, as often as may be indicated to meet the urgency of the case. Administer in hot water when quick action is desired.

AN OVERDOSE CAUSES PAIN AT BASE OF BRAIN.

——WE MAKE ONE QUALITY ONLY.——

Price,
2 oz., 45c.; 4 oz., 75c.; 8 oz., $1.35; 16 oz., $2.50

B. KEITH & CO.,
75 William Street, N. Y.

ON THE USE OF PURGATIVES.

BY CHARLES A. HOFF, M. D., ST. LOUIS, MO.

Of all preparations contained within the *pharmacopœia,* there are none, apparently, held in higher esteem by mankind than that class of medicines, commonly known as purgatives. The busy practitioner confidently prescribes them with variable frequency, singly and combined, from the date of the writing of his very first prescription to that of his last; and the corner druggist rarely sees a day pass over his head on which he does not greet the customer who has called around to get "something to act upon his bowels." Indeed, the inevitable purgative awaits the tiny baby screaming in its first attack of colic; it is resorted to by the invalid weighted down with years of suffering and disease; and it is by no means despised by the individual in robust health, when assailed by the various petty ills, which even the most vigorous seldom entirely escape.

Notwithstanding the fact that purgatives are so generally prescribed by the physician, and so frequently resorted to without advice by the patient, they are not altogether incapable of doing harm. As everybody knows, the habit of purging the system repeatedly with salines, cholagogues, hydragogues, or drastics, is a most pernicious one; and the physician who fails to exercise a proper care, both in the selection and the administration of cathartics will sooner or later bankrupt the health of his patients as well as his own hard earned reputation.

Constipation is a complication of so many disorders, a symptom of so many diseases that its treatment in different cases depends upon very different considerations. For a simple, ordinary attack, the average doctor has been accustomed to use a simple purge, such as castor oil, sulphate of magnesia, rhubarb, senna, aloes, colocynth, blue pills, etc.; yet in none of these, can it be truly said, has there been found all that could be wished for, even in so simple a matter as a laxative. Where can we find the physician who has not been vexed and annoyed at the complaints of his patients against the purgative medicines he has been accustomed to prescribe. Some people there are who can not or will not swallow pills; many object to the nauseating castor oil; not a few oppose the use of salines since they are disagreeable both in taste and effect; many look upon all resinous cathartics as objectionable on account of their so called heating properties; aloes is objected to in pills and especially in pregnancy; elaterium is said to be excessively harsh and severe, croton oil is known to be dangerous; podophyllin causes an undue amount of griping; blue mass is avoided on general principles; and so on to the end of the chapter.

Fortunately, however, the physician of the present need no longer be placed in a dilemma when called upon to prescribe a preparation free from the faults enumerated in connection with ordinary purgatives. The pharmacist has bravely come to his aid with a formula of incomparable excellence; and this preparation, a combination of "manna, purified cathartic acid and fruit juice," although but recently brought to the notice of the medical world, is, nevertheless, already regarded as a most valuable addition to the resources of medicine.

The happy thought that suggested the combination known as the Rio Chemical Co.'s Acid Mannate justly challenges unlimited admiration and esteem, and has thus far evoked from the profession an almost universal verdict of commendation and praise. Prompt, mild and certain in its action, Acid Mannate may well be considered an ideal remedy in the constipation of pregnancy. Being pleasant to the taste, and continuing its good work without increased dosage, it is pre-eminently adapted to cases of habitual constipation. Indeed, in its wide range of adaptability as an aperient medicine it is impossible to exaggerate its importance, or allude either directly or indirectly to the vast variety of its beneficial, therapeutical properties.

The importance of laxatives is probably nowhere appreciated so much as in the constipation of pregnancy; and it is to this fact, no doubt, more than to any other, that Acid Mannate owes its great popularity and fame among remedial agents. The testimony of thousands of honorable medical gentlemen leading us to believe that, through the beneficent effect of this same elegant formula, constipation need not hereafter, as in the past, be regarded as one of the most troublesome attendants upon gestation. Moreover, the atrocious female pill of unknown composition but of dire effect, which has deluged the drug market for ages, we may consider as having had its day; and it is to be hoped that, since the physician is now in possession of a purgative especially suited to the period of gestation, female life will be less frequently harassed by the ails and aches said to be peculiar to the sex; and that miscarriages, displacements, granular erosions, congestions, headaches, dyspeptic and hypochondriacal attacks, and the whole long train of aches, pains and nervous ills will grow less familiar to the medical profession in the same ratio that the physician increases his familiarity with the actions of Acid Mannate.

A full sized bottle of Acid Mannate will be sent free to any Physician who desires to test it, if he will pay the express charges and mention this Journal, on application to the

RIO CHEMICAL CO.,
St. Louis, Mo.

J. HENRY HENTZ. J. P. ROBINETT. J. HENRY HENTZ, Jr.

ESTABLISHED 1793.

WHITE, HENTZ & CO.,

SOLE PROPRIETORS OF

Trimble and Pennsylvania Monogram Whiskies.

222 and 224 NORTH SECOND ST., PHILADELPHIA.

D. LIEBER, 17 South William St., New York. Col. H. A. SELIGSON, 1200 Pennsylvania Ave., Washington, D. C.

NATRONA BI-CARBONATE OF SODA.

(ABSOLUTELY PURE.)

NATRONA



TRADE MARK

SODA

The nature of the raw material from which NATRONA BI-CARBONATE OF SODA is made—viz., kryolith, a mineral containing *pure sodium*—insures a purity and uniformity of product which cannot be obtained from any other known material. In making BI-CARB. SODA from any other raw material, the use of sulphuric acid is a necessity, but none is used in any part of the process of making NATRONA BI-CARB.; hence its entire freedom from the slightest trace of arsenic, which is always present in ordinary soda. Its absolute purity and entire freedom from all traces of *sulphate of soda*, common salt and other impurities, render NATRONA BI-CARB. NEARLY TASTELESS, and being bolted through the finest bolting-cloth, insures the finest stage of division.

To these indisputable facts the attention of CONSUMERS of soda is specially called. They are IMPORTANT, and should influence both those who use and those who sell soda, to buy and sell NONE BUT THE BEST.

The NATRONA BI-CARB. Soda is kept in stock by almost every wholesale druggist and grocer throughout the United States, of whom it may be ordered.

Natrona Bi-Carb. Soda is unequaled by any other brand of English or American Manufacture.

PENNA. SALT MANUFACTURING CO.,

NATRONA CHEMICAL WORKS. PHILADELPHIA, PA.

ALTHENE SKIN SOAP

An absolutely pure and perfect soap for all purposes of the toilet, nursery, bath or sick-room. Has the approval of leading chemists and physicians, and is recommended by all who have used it. Price 25 cts. a cake, or 65 cts. for a box of three. Can be obtained of the retail druggists or from

J. W. CAMPION & CO., 916 Filbert Street,

PHILADELPHIA.

THE

VIBURNUM COMPOUND

OF

DR. HAYDEN,

THE STANDARD IN

FEMALE DISORDERS.

Employed in the leading Hospitals, and prescribed daily by the most eminent Gynæcologists. ***Five Thousand Physicians*** have given their testimonials for ***HAYDEN'S VIBURNUM COMPOUND.***

DISPENSED BY ALL APOTHECARIES.

ANALYZE "MONON" Resolutions!?

Whereas, The Monon Route wishes to make known to the world that it has the finest system of Pullman Buffet Sleepers and Chair Cars, running between Chicago and Louisville, or Chicago, Indianapolis and Cincinnati;

And Whereas, This makes it in fact the double connecting link of Pullman travel between the winter cities of Florida and the northern summer cities; then

BE IT RESOLVED, That, before starting on a trip, be sure and address E. O. McCormick, Gen'l Pass. Agent, 185 Dearborn Street., Chicago, for rates, etc.

GOOD AGENTS wanted to solicit subscriptions for the AMERICAN ANALYST. Apply 19 Park Place, N. Y.

Sura Cura ROBINSON'S SURE CURE FOR

RHEUMATISM

And NEURALGIA,

And remedy for diseases arising from an impure state of the blood. An antidote for MALARIA. Price 50 c. and $1. Sent by mail on receipt of price. Send for Circular.

R. W. ROBINSON & SON,
184 Greenwich Street,
NEW YORK.

Sura Cura

LEPAGE'S

THE ONLY GENUINE

LIQUID GLUE



THE STRONGEST GLUE IN THE WORLD.

2 GOLD MEDALS AWARDED LONDON 1883. NEW ORLEANS 1885.

RUSSIA CEMENT CO. Gloucester Mass.

Used by thousands of first-class mechanics and by such manufacturers as Pullman Palace Car Co., Mason & Hamlin Organ and Piano Co., &c., &c.

Repairs Everything.

Its success has brought a lot of imitators copying us in every way possible. Remember that THE ONLY GENUINE LePage's Liquid Glue is manufactured solely by the

RUSSIA CEMENT CO.
GLOUCESTER, MASS.

Send 10c. and dealers' card who doesn't keep it in stock, for sample.

Patent Pocket Can. No waste.

Autograph below is on every Patent Can.

Russia Cement Co.

:::JUST PUBLISHED:::

MANUAL OF DIETETICS

— FOR —

Physicians, Mothers and Nurses.

BY

W. B. PRICHARD, M. D.,

New York.

THIS USEFUL MANUAL CONTAINS VALUABLE INFORMATION FOR LADIES; SUCH AS, MATERNAL OBLIGATIONS, CLEANLINESS, CLOTHING, WET NURSING, WEANING AND ARTIFICIAL FEEDING OF INFANTS. ALSO, A COMPLETE DIET FOR THE SICK IN EVERY DISEASE, INCLUDING THE FOLLOWING: PLEURISY, BRONCHITIS, ASTHMA, CONSUMPTION, BRIGHT'S DISEASE OF THE KIDNEYS, CALCULUS OR STONE, CYSTITIS, DIABETES, TYPHOID FEVER, DIPHTHERIA, SCARLET FEVER, MEASELS, ETC., ETC.

Handsomely Bound in Cloth, Fifty Cents,

SENT FREE ON RECEIPT OF PRICE.

ADDRESS,

THE DIETETIC PUBLISHING CO.

115 FULTON STREET,

NEW YORK.

THE TORSION

Braided Wire Mattress.

At all times a thoroughly ventilated and perfectly clean mattress, it cannot absorb odors, or retain exhalations or disease germs.

D. HAYES AGNEW, M. D., Prof. of Surgery, University of Pennsylvania, says:

"The Torsion Braided Wire Pillow and Mattress I regard as superior to anything of the kind now in use; well suited for either private or hospital use.

Prof. WM. H. PANCOAST, late Professor of Anatomy, etc., in Jefferson Medical College, now Professor of Anatomy and Clinical Surgery in the Medico-Chirurgical College of Philadelphia Hospital Surgeons, says:

"I have used in my surgical practice your Braided Wire, in the form of mattresses, pillows for the head and body, and short pillows for the arm and leg when injured. I find them most admirable, cool and light, yet affording perfect and elastic support.
I have saved a patient from bed sores by the use of the Braided Wire mattress."

WM. H. FORD, President Board of Health, Philadelphia, says:

"I have used the Torsion Braided Wire Mattress with great satisfaction, it is light and therefore easily handled; it is elastic and very comfortable. The case can be easily removed to afford a complete airing, a feature of great importance from a health point of view.
It is an invention of great usefulness.

For descriptive circular and price list, send to

The Torsion Braided Wire Upholstering Company,

1017 CHESTNUT ST., PHILA.

"BILLET"

are

Carefully Selected

French Sardines,

Packed in Choicest Olive Oil.

AT ALL LEADING GROCERS.

Any Retail Druggist in the United States who desires to obtain Advertising Matter, Show Cards, Signs, etc., which will assist and instruct him in the sale of Harriet Hubbard Ayer's Recamier Toilet Preparations and Vita Nuova, should address THE RECAMIER MFG. CO., 52 and 54 Park Place, New York City.

UNEQUALLED Ask your Grocer for, and insist on having, **LEA & PERRINS'** Sauce, "The Worcestershire." It is known throughout the whole civilized world as the Best and most Delicious Sauce. **DELICIOUS**

SCOTCH MARMALADE, Jams, Fruit and Wine, Jellies, &c.
By James Keiller & Son, Dundee.

SCOTCH BISCUITS, Albert, Water, and Oat Cake,
By Robert Middlemass & Son, Edinburgh.

RACAHOUT des Arabes, by De Langrenier, Paris.

BAY WATER, West India, (J. D. S. brand), in cases, one dozen bottles.
Sold by all first-class Grocers.

JOHN DUNCANS' SONS, 43 Park Place, New York. Agents for the United States.

Robert Gordon's
TRADE MARK.
SPICED · SEA · FOODS
(IN GLASS.)
OYSTERS, LITTLE NECK CLAMS, MUSSELL, SHRIMP, LOBSTER, Etc.,
Packed in 8 and 16 oz. Jars. Guaranteed to be strictly Pure.
MADE OF THE FINEST MATERIALS.
—ALSO,—
ROBERT GORDON'S CONDENSED CLAM CHOWDER,
In 3-lb Cans. Cheapest and Best in the Market.
MANUFACTURED BY
JONES, GORDON COMPANY, Limited,
204 West Street, New York.



GOLD MEDAL, PARIS, 18—
BAKER'S
Breakfast Cocoa.
Warranted *absolutely pure Cocoa,* from which the excess of Oil has been removed. It has *three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup.* It is delicious, nourishing, strengthening, easily digested, and admirably adapted for invalids as well as for persons in health.
Sold by Grocers everywhere.
W. BAKER & CO., Dorchester, Mass.

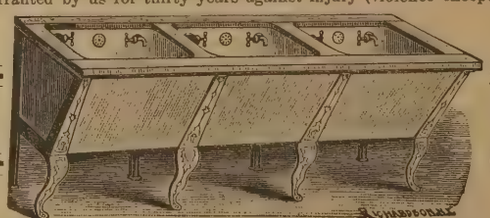
RIDGE'S FOOD
is the most reliable substitute known for mother's milk. Its superiority rests on the test of 30 years use in Great Britain and the U. S. A sustaining, strengthening diet for Invalids; nutritious, easily digested, and acceptable to the most delicate stomach. Four sizes, 35c. up. Pamphlet, "Healthful Hints," sent free. WOOLRICH & CO., Palmer, Mass.

ESTABLISHED 1872.
GELATINE.
JAMES CHALMER'S SON'S
Transparent Gelatine.
PURITY—STRENGTH.
Best for Family Use.
Jellies, Blanc Mange, Etc.
ACKNOWLEDGED BY EVERY ONE EQUAL TO THE BEST.

Subscriptions $1 per year. Now is the time to subscribe.

STEWART CERAMIC CO.,
312 PEARL ST., Cor. Peck Slip, NEW YORK.
Sole Manufacturers under Morahan's Patents of
SOLID WHITE CROCKERY STATIONARY WASH TUBS
Warranted by us for thirty years against injury (violence excepted).

CANNOT LEAK.



VERY STRONG.

This cut shows three Tubs set up with galvanized iron stands and heavy ash frame firmly secured on top.
SMOOTH GLAZED SURFACES. ALWAYS CLEAN.
The only solid white crockery Washtub ever made in the world. Do not buy imitations until you see the genuine "Morahan's Patent," stamped on every tub. Washboard and Soapcup moulded in every set.
SOLID WHITE CROCKERY SINKS
Made of same material as the Tubs and fully as strong.
Send for Illustrations and Price Lists. Send for Illustrations and Price Lists.

PEACOCK'S BROMIDES

(SYR: BROM: COMP: PEACOCK)

NERVE SEDATIVE.

Each fluid drachm represents 15 grains of the Combined C. P. Bromides of Potassium, Sodium, Calcium, Ammonium and Lithium.

USES:—EPILEPSY, and all CONGESTIVE, CONVULSIVE, and REFLEX NEUROSES.

This preparation has stood the test of time and experience, and can be relied upon to produce results, which can not be obtained from the use of commercial bromide substitutes.

DOSE:—One to two FLUID drachms, in WATER, three or more times a day.

PEACOCK CHEMICAL CO., St. Louis.



These Goods are "Par Excellence,"

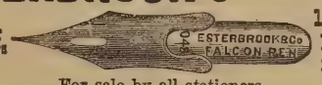
Pure, Healthful and Reliable, warranted to give satisfaction in every particular. For sale by wholesale and retail grocers throughout the United States. VOUWIE BROS., Manufacturers, CLEVELAND and CHICAGO.

OPIUM AND LIQUOR HABIT CURED.

WE solicit an investigation of our system and methods, and will gladly send to any one very interesting matter on the OPIUM HABIT DRUNKENNESS and their effects and cure. Physicians specially invited to examine, and if desirous of trying our remedies, liberal arrangements will be made with them.

THE LESLIE E. KEELEY CO., Dwight, Illinois.

ESTERBROOK'S STEEL PENS

Leading Numbers 

14,048,128 130, 135, 333, 161.

—For sale by all stationers.—

THE ESTERBROOK STEEL PEN CO., 26 John St., N. Y.
Works: CAMDEN, N. J.

THE FINEST MADE
COLBURN'S
PHILADELPHIA
MUSTARD
KING OF CONDIMENTS

ESTABLISHED 1857.

J. H. CUTTER,

OLD

BOURBON AND RYE WHISKIES.

We are the Sole Owners and Proprietors of this Celebrated Brand of Whiskey.

C.P.MOORMAN & CO. LOUISVILLE, KY.

We Guarantee the Superior Quality and Absolute Purity of every Barrel of Whiskey sold by us under this Brand.

A CURE

FOR

Sick and Nervous

HEADACHES.



ASK FOR

BROMO-SODA

AND

TAKE NO SUBSTITUTE.

SWIFT'S

Choice Chicago Dressed Beef

—AND—

MUTTON.

CAN be found at all times in full supply and at popular prices at the branch houses in all the larger cities and is ***retailed by all first class butchers.***

The trade of all marketmen and meat dealers is solicited for our Wholesale Branch Houses, and the ***public may rest assured*** *that in* ***purchasing our meat*** *from dealers they will* ***always receive the best.***

SWIFT AND COMPANY,

UNION STOCK YARDS,

CHICAGO, ILLS.

Tabasco Pepper Sauce

OR LIQUID PEPPER.

Is simply the Pulp of the Ripe Pepper Extracted by Pressure.

The seed of this Pepper was obtained from Central America, and by careful cultivation in Louisiana for many years has been so improved in strength, flavor and aroma, as to have become a new variety of Red Pepper, superior to all others. The pulp is so handled as to retain all the flavor, strength, aroma and color of the ripe fruit, and to keep unimpaired in any climate. It excites the appetite, promotes digestion, and is pronounced, by connoisseurs, to be the finest condiment in the world. For medicinal purposes it recommends itself by its purity, strength and diffusible form.

Manufactured by E. McILHENNY,

NEW IBERIA, LA.

For Sale by all Wholesale Grocers.

A NEW USE

FOR

LIQUID PEPTONOIDS.

Successfully used in Dissolving the False Membrane in Diphtheria.

A Physician writes: *"In an experience of over thirty years I have never used anything to equal your LIQUID PEPTONOIDS as a local application with a spray. It will dissolve the membrane and destroy the diphtheretic odor in less than twenty-four hours. I use the LIQUID PEPTONOIDS full strength, as a spray, two or three times a day, in bad cases."*

Used successfully by another physician in two desperate cases:—*"I was induced to try LIQUID PEPTONOIDS in two very desperate cases of DIPHTHERIA. I think I never saw throats more heavily coated with exudate than were these, and I think I never saw it more rapidly disappear than in these cases, by frequent spraying with your LIQUID PEPTONOIDS."*

LIQUID PEPTONOIDS can be taken by patients unable to ingest food in any other form. In *dyspepsia* and *loss of appetite* its effects are positive, its digestive properties assisting in the digestion of food taken and its peptogenic properties quickly stimulating the natural digestive secretions of the stomach

PANCROBILIN.

Prepared (in both Liquid and Pill form) from Extract of Pancreas and Bile.

This preparation is designed expressly to increase the digestion and absorption of fats.

We believe that the fat-digesting properties of pancreatine and bile are inseparable, and that without their union in the intestinal tract but little, if any, fat would be digested and absorbed.

PANCROBILIN will be found of great service in *Phthisis and other wasting diseases, Nervous Prostration, Constipation, Inanition, Malnutrition, Intestinal Indigestion* and wherever there is a failure to assimilate fats.

If the skin is first wet with LIQUID PANCROBILIN, the inunction of oils will be greatly facilitated.

LIQUID PANCROBILIN is put up in pound bottles. PILL PANCROBILIN is put up in bottles holding 100 pills. The coating of the pills will resist acid digestion, but will be quickly dissolved in the alkaline secretions of the duodenum.

PHOSPHO-CAFFEIN COMP.

(*Granular Effervescing.*)

Formula for each dessertspoonful:—

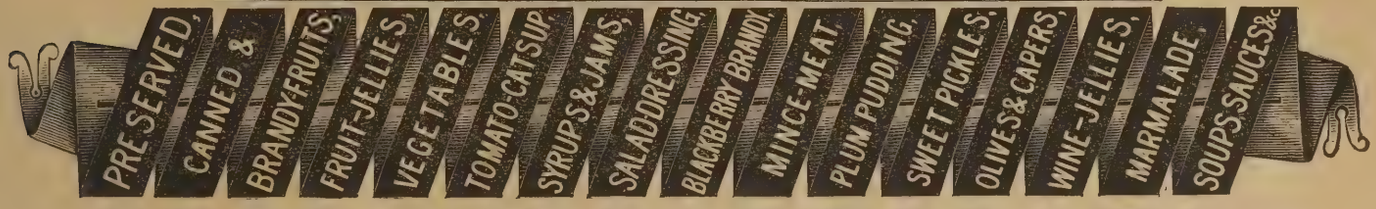
Caffein.
Acidi Phosphorici āā, grains, ss.
Antipyrin.
Ext. Apii. Grav. dulc. (*Celery*), āā grains, j.
Sodium Bromide, grains, v,

The satisfactory results produced by PHOSPHO-CAFFEIN COMP. in *Headaches, Neuralgia, Insomnia, Neurasthenia and general Nervous Irritability*, are not due to the effect of any one ingredient, but the happy effect of the combination. A thorough series of comparative tests have demonstrated the superiority of the above formula over any other in the market.

REED & CARNRICK, New York.



PRICES ON PRESERVED FRUITS REDUCED 1ST DEC. 1885



SOLD BY THE LEADING GROCERS ON THE AMERICAN CONTINENT.

SCOTT'S EMULSION

OF PURE COD LIVER OIL WITH HYPOPHOSPHITES OF LIME AND SODA.

THE STANDARD EMULSION OF COD LIVER OIL THROUGHOUT THE WORLD.

A BEAUTIFUL CREAMY MIXTURE—ALMOST AS PALATABLE AS MILK.

Having much greater remedial power than the crude Cod Liver Oil, without any of its nauseating effects.

Its PALATABLENESS, EASE OF DIGESTION, and long tolerance by most sensitive stomachs as well as its reliable therapeutic effect, has given it special favor with the medical Profession, and receives their unqualified endorsement and support.

Possessing as it does the tonic and stimulating properties of the Hypophosphites in combination with the strengthening and fattening qualities of the Cod Liver Oil—gives it a remedial value in WASTING DISEASES, ANÆMIA or IMPOVERISHED BLOOD, EMACIATION and CONSUMPTION—unequalled by any single or combined remedy in existence. The rapidity with which delicate children fatten and grow strong on this palatable Emulsion, is very remarkable.

Samples will be sent free except express charges to any wishing to try this preparation. For sale by all druggists.

SCOTT & BOWNE, New York.


Pyle's Pearline Possesses Peculiar Purifying Properties
Hot Weather
Pyle's Pearline
Many women find Pyle's Pearline indispensable for washing dishes, windows, carpets, clean-ing house, etc., etc., but because of its wonderful cleansing properties are afraid to have their clothes washed with it. Well in the past ten years the consumption of Pearline has exceeded 50,000,000 packages and no complaints, but numerous letters praising it. Why, because PEARLINE is absolutely harmless in its place, and one of the best places to put it is in the wash tub. You can soak your finest linens and laces in Pearline and water for a month if they were washed in it once a week for twenty years. Perfect safety. That's as much Pearline as they would We could not afford to spend our time and money in telling the public through the newspapers a single thing about Pearline that would not stand the test, and the sooner you'll know that PEARLINE will do it and the sooner you test it, the sooner you'll find one coarse thing about it is as pure and harmless as the fine linen and cuffs are rough and irritate your more than we claim for it. It is as pure and harmless as the finest imported castile soap. It's success has brought out many dangerous imitations. Beware of them. It is the only perfect cleanser, which, although
Hot Weather
is just the time to test the wonderful, labor-saving and economical qualities of
Pyle's Pearline.
Because then the wash is largest, the work most op-pressive, and the articles to be washed most delicate. PEARLINE is as harmless as pure castile soap. It does away with most of the rubbing—hence it does away with most of the washing which run both your health and your clothes, and relieves this hardest of women's drudgery. PEARLINE is the latest and best thing to do the way of soap, and, until something better comes, it behooves every woman who has washing, to supply herself or her cleaning, which, although
millions of families. Sold by JAMES PYLE, New York.
PEARL
is a great
Ble
to the w
mistress of
wants to
clean.
dishes.
paint.
cloth.
floors.
known.
hands.
washboard,
JAMES PYLE'S
OK
PEARLINE
WASHING
COMPOUND
THE GREAT INVENTION
FOR SAVING TOIL & EXPENSE
WITHOUT INJURY TO THE
TEXTURE, COLOR OR HANDS.
NEW YORK
For Men Chiefly.
Collars and cuffs are rough and irritate your
PEARLINE
is the Standard
Washing Compound
As pure and harmless as the finest imported castile soap. Washes the coarsest and finest things equally well. As it does away with most of the rubbing, it reduces the wear and tear on both yourself and your clothes. Over one million families use it. Do you?
Beware
Peddlers and some unscrupulous grocers are offering imitations which they claim to be Pearline, or "the same as Pearline." They are not, and besides are dangerous. PEARLINE is never peddled, but sold by all good grocers.
Manufactured only by JAMES PYLE, New York.
OUR Mother's ILSE
PEARLINE
Mothers
Know the danger in using a poorly washed bottle—it often causes death. A bottle washed with Pyle's Pearline and water will be perfectly clean—cannot be otherwise. Not necessary to use shot, etc., etc. Ordinary servants may be trusted to wash the baby's bottle if you see that they use Pearline. It has no equal for washing children's linen. For sale by Grocers everywhere.
Manufactured only by JAMES PYLE, New York.
From Babyhood, New York, June, 1884.
PEARLINE dissolved in hot water, cleanses the inside of nursing bottles well, if shaken up and down vigorously. After washing, the bottle must be rinsed thoroughly with pure hot water, then with cold.
Upstairs and Down
From Garret to Cellar, in the Laundry, Kitchen, Butler's Pantry, and dry, Bath Room—JAMES PYLE'S PEARLINE has its place. There's nothing too fine for it, coarse—nothing too fine for it. With the aid of PEARLINE a delicate woman can clean house and wash clothes. It virtually takes the place of hard work and is perfectly harmless: in fact, your things last longer, because you do not have to rub them to pieces to get them clean. PEARLINE is for sale everywhere, but beware of the numerous imitations which are peddled from door to door—they are dangerous.
Better Far
than the many Medals and Diplomas awarded to
Pearline
Washing Compound
by Expositions, State and County Fairs throughout this land, is the one great *laurel* it *wears*—Success Many millions of packages are required every year to supply the demand created by intelligence. Give PEARLINE a fair trial—you don't have to be over-bright to see that it saves time and labor, and wear and tear of both body and clothes. It takes the drudgery out of washing and cleaning—does this work better than anything known, and withal is perfectly *harmless*. Every grocer sells PEARLINE. Beware of the many imitations which are pushed on the public by prizes and peddling—they're dangerous. JAMES PYLE, New York.
It Is the Original & Best
For Washing Clothes
For Cleaning House
For Washing Dishes
For Saving Labor
For Saving Time
It is Harmless
JAMES PYLE'S
PEARLINE
PEARLINE
JAMES PYLE'S
PEARLINE
JAMES PYLE'S
PEARLINE
WASHING COMPOUND
THE GREAT INVENTION
FOR SAVING TOIL & EXPENSE
WITHOUT INJURY TO THE
TEXTURE, COLOR OR HANDS.
NEW YORK

PHYSICIANS'
Club Rates on Valuable Journals.

The American Analyst.

A Semi-monthly Review, devoted to Industrial Progress, Sanitation, the Chemistry of Commercial Products, and the Suppression of Adulteration. This journal contains just the information, the possession of which is valuable to the practitioner in his interccurse with patients. $1.00 per year.

The American Medical Digest.

A Monthly Epitome of the best, most practical and useful Papers contained in the Medical Publications of the world. A current record of the Monthly Progress of Medical Science. $2.00 per year.

We will send these two together to any address for $2.00 per year.

We also receive Subscriptions for the following Medical Journals. In each case the publishers' price is given and the price for which we will send that particular Journal with the ANALYST and the DIGEST:

	PUBLISHER'S PRICE.	WITH DIGEST AND ANALYST.
Albany Medical Annals	$1 00	$2 75
Ann Arbor Med. Counsel'r (Hom.)	2 00	3 75
Ann Arbor Phys'n and Surgeon	2 00	3 75
Atlanta Med. and Surg. Journal (Only new subscribers taken.)	2 50	4 00
Austin (Tex.), Daniel's Med. Journal	2 00	3 75
Boston Annals of Gynæcology	2 00	3 50
Boston Journal of Health	1 00	2 75
Boston Med. and Surg. Journal (Outside of New England only.)	5 00	6 00
Chicago, Jour. of Am. Med. Association	5 00	6 00
Chicago Medical Jour. and Ex.	3 00	4 50
Chicago Medical Times	2 00	3 75
Chicago, Western Med. Reporter	1 00	3 00
Cincinnati Med. and Dental Journal	1 00	3 00
Dallas (Tex.), Courier Rec. of Med.	2 00	3 75
Detroit, American Lancet, Mo.	2 00	3 75
Detroit, Index Medicus (A Monthly Classified Record of Med'l Liter.)	10 00	10 00
Detroit, Leonard's Ill. Med. Monthly	50	2 35
Detroit, Medical Age (Semi-Monthly)	1 00	2 75
Gilsum (N. H.), Quarterly Review of Narcotic Inebriety	1 00	2 75
Indianapolis (Ind.), Ecl. Med. Journal	1 00	2 75
Indianapolis Medical Journal (Outside of Indiana only.)	1 00	2 75
Kan as City, Western Med. Jour.	2 00	3 75
Louisville, Medical Investigator	50	2 35
Nashville, Jour. of Med. and Surg.	2 00	3 75
New Orleans, Med. and Surg. Journal	3 00	4 75
New York, Sanitary Era	1 00	2 75
Braithwaite's Retrospect	2 50	3 50
The Epitome	2 50	3 50
New York Medizinische Presse (The only *German* Medical Journal in U. S)	2 50	3 75
Philadelphia Hahnemannean (Monthly). (New Subscribers only.)	3 00	4 25
Phila. Med. and Surg. Reporter	5 00	6 50
Philadelphia Medical Summary	1 00	2 85
Philadelphia Medical Register	2 00	3 50
Phila. Archives of Pediatrics (The only Journal devoted to Infants' Diseases.)	3 00	4 50
Philadelphia Medical World	1 00	2 85
Philadelphia Medical Times	2 00	3 75
Sacramento Medical Times	2 50	4 00
San Francisco Pacific Med. and Surgical Journal	3 00	4 50
St. Louis Medical Brief	1 00	2 90
St. Louis American Med. Journal	2 00	3 25
St. Louis Med. and Surg. Journal	2 00	3 25
Toronto, Canadian Practitioner	3 00	4 50

More Journals will be added to this List.

Attention is called to the Special Journals in this List, such as the

Boston Annals of Gynæcology,
Detroit Index Medicus,
New York Medizinische Presse,
Phila. Archives of Pediatrics.

Address,

The ANALYST PUBLISHING CO.
19 PARK PLACE,
NEW YORK.

ARMOUR & CO.
CHICAGO, ILLS.

PACKERS OF

Pork and Beef Products

CANNED MEATS,

ETC.,

FOR HOME CONSUMPTION AND FOR EXPORT

TO ALL PARTS OF THE WORLD.

Also,

SHIPPERS OF

Choice Dressed Beef,

MUTTON AND HOGS,

In Refrigerator Cars,

To BOSTON,
NEW YORK,
PHILADELPHIA,
BALTIMORE,

And other cities throughout the country.

Pure LAGER BEER,
"IMPERIAL" and "CULMBACHER"
Brewed & Bottled
SPECIALLY FOR
HOTELS, CLUBS
AND
PRIVATE FAMILIES
BY
Beadleston & Woerz
291 W. 10th St. New York.
Orders by Postal Card promptly attended to.

ESTABLISHED IN LONDON 1831.



W. G. DEAN & SON,

MANUFACTURERS OF

PASTE AND STICK

LICORICE

PURE CALABRIA, Equal to the Imported

Try our SICILY (brand select).

BEST IN THE MARKET.

Also LICORICE TABLETS.

361 & 363 Washington Street,

And 84, 86 & 88 North Moore St.,

W. G. DEAN,
HARRY W. DEAN. } NEW YORK

MALTINE

MALTINE is far superior in nutritive and diastatic value to any Malt Extract manufactured in the World. There is no reconstructive that excels Maltine in Phthisis and many wasting Diseases.

MALTINE in its different forms is the only malt preparation we now employ, being so palatable, digestible, and easily assimilated. Of its efficiency in appropriate cases there is no more doubt in our minds than there is of the curative power of Quinine, Cod Liver Oil, the Bromides, and the Iodides.

It deserves to stand in the front rank of constructives, and the constructives by their preventive, corrective, and curative power are probably the most widely useful therapeutical agents that we possess.
PROF. L. P. YANDELL.

MALTINE is a valuable food, a food of priceless value at times of emergency. In fact, in very grave gastric cases it is a food which may be often resorted to when at one's wits end what to do.
J. MILNER FOTHERGILL.

Out of 14 trade samples of Malt Extract examined by Messrs. Dunstan & Dimmock, ONLY THREE possessed the power of acting on starch. These brands were MALTINE, Corbyn, Stacey & Co.'s Extract, and Keppler's Malt Extract. WILLIAM ROBERTS, M.D., F.R.S.

I have subjected "Maltine" and all other leading "Extracts of Malt" to an exact quantitative comparison of their diastatic activity. The results demonstrate conclusively the far greater diastatic value of Maltine, and enable me to state, without any qualification whatever, that it far exceeds in diastatic power any of the six preparations of Malt which I have examined.
R. H. CRITTENDEN.
Professor of Physiological Chemistry in Yale College.

At the International Health Exhibition held in London, England, the only gold medal and the highest award of merit were given to Maltine by a Jury composed of the best chemists in Europe, and recent analyses made by the most reliable authorities in Europe and America prove conclusively that Maltine—in nutritive and diastatic value—is superior to all other malt preparations now in the market.

NOTE.—Physicians will observe that Maltine, as now prepared, is not so viscid as formerly made, being of a more fluid consistency; and, while retaining the nutritive and diastatic value which has given it precedence over all other Extracts of Malt, it is rendered entirely agreeable to the taste of the most fastidious, and is more easily administered. As now prepared, we positively guarantee that Maltine will not ferment or congeal in any climate or at any season of the year.

COMPLETE LIST OF MALTINE PREPARATIONS.

MALTINE (Plain).
MALTINE with Alteratives.
MALTINE with Cod Liver Oil.
MALTINE with Hypophosphites.
MALTINE with Peptones.
MALTINE with Pepsin and Pancreatine.
MALTINE with Phosphates, Iron Quinia, and Strychnia.
MALTINE Ferrated.
MALTO-YERBINE.
MALTO-VIBURNIN.
MALTINE with Cascara-Segrada.

Physicians may obtain Maltine from all druggists in every part of the world. In cases where the physician intends to prescribe Maltine, the word "Maltine" should be written, and not simply the words "Malt Extract," or "Extract of Malt."

Send for Pamphlet giving comparative analyses by 100 of the best Analytical Chemists in this country and Europe.

We will be happy to supply any regular practitioner with eight ounces each of any three Maltine compounds that may be selected from our list, providing he will agree to pay express charges on same.

THE MALTINE MANUFACTURING CO.,
54 Warren Street, New York.

Laboratory, Yonkers-on-Hudson.

In corresponding with Advertisers, please mention the AMERICAN ANALYST.



Its superior excellence proven in millions of homes for more than a quarter of a century. It is used by the United States Government. Endorsed by the heads of the Great Universities as the Strongest, Purest, and most Healthful. Dr. Price's Cream Baking Powder does not contain Ammonia, Lime or Alum. Sold only in cans.

PRICE BAKING POWDER CO.

NEW YORK. CHICAGO, ST. LOUIS.

STERLING



BAKING POWDER

MADE FROM
99 50/100 PURE CREAM TARTAR.

This powder never varies. A marvel of purity, strength and wholesomeness. More economical than the ordinary kinds. SOLD ONLY IN CANS.

STERLING MANU'F'G CO.,
12 & 14 Spruce St., New York.

"GOOD MORNING"
COFFEE PERCOLATOR.

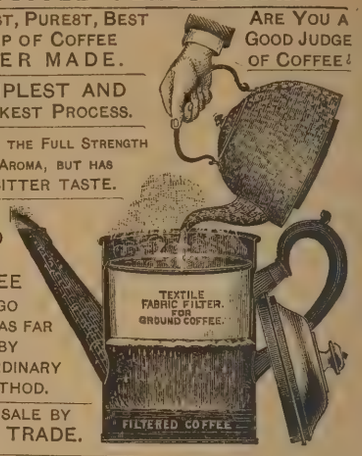
RICHEST, PUREST, BEST CUP OF COFFEE EVER MADE.

ARE YOU A GOOD JUDGE OF COFFEE?

SIMPLEST AND QUICKEST PROCESS.

RETAINS THE FULL STRENGTH AND AROMA, BUT HAS NO BITTER TASTE.

ONE POUND OF COFFEE WILL GO TWICE AS FAR AS BY ANY ORDINARY METHOD.



FOR SALE BY THE TRADE.

IF YOU CANNOT PROCURE IT IN YOUR TOWN, WRITE TO

MANNING, BOWMAN & CO.
57 Beekman St., New York.
Circulars and Price List sent Free on Application.

AMERICAN ANALYST CLUB RATES.

	Regular Price.	Price including American Analyst.
American Magazine	$3 00	$3 25
American Rural Home	75	1 05
American Agriculturist	1 50	1 60
Art Amateur	3 50	4 00
Arthur's Home Magazine	2 00	2 00
Art Interchange	3 00	3 25
Babyhood	1 50	1 60
Ballou's Magazine	1 50	1 75
Bedford's Magazine	2 50	3 00
Cassell's Family Magazine	1 50	1 75
Century	4 00	4 25
Christian Herald, N. Y.	1 50	1 50
Christian Union	3 00	3 00
Cottage Hearth	1 50	1 50
Country Gentleman	2 50	2 50
Current Literature	2 50	2 75
Demorest's Magazine	2 00	2 00
Family Story Paper	3 00	3 00
Farm and Fireside	50	1 00
Fireside Companion	3 00	3 00
Forum	5 00	5 00
Frank Leslie's Illustrated Newspaper	4 00	4 00
Frank Leslie's Popular Monthly	3 00	3 00
Galaxy of Music	1 00	1 25
Gleason's Home Circle	2 00	1 50
Godey's Lady's Book	2 00	2 25
Golden Days	$3 00	$3 00
Good Housekeeping	2 50	3 00
Harper's Bazar	4 00	4 00
Harper's Young People	2 00	2 25
Harper's Weekly	4 00	4 00
Harper's Monthly	4 00	3 50
Household	1 10	1 35
Housekeeper	1 00	1 25
Ledger	3 00	3 00
Lippincott's Magazine	3 00	2 50
New York Weekly	3 00	3 00
Our Little Ones and Nursery	1 50	1 65
Peck's Sun	2 00	2 25
Peterson's Magazine	2 00	2 00
Puck	5 00	4 50
Rural New Yorker	2 00	2 30
Saturday Night, Philadelphia	3 00	3 00
Saturday Evening Post, Philadelphia	2 00	2 00
Scientific American	3 00	3 25
Scribner's Magazine	3 00	3 00
Vick's Illustrated Monthly	1 25	1 50
Western Rural	1 50	2 00
Wide Awake	2 40	2 60
Yankee Blade	2 00	1 50
Young Ladies' Journal	4 00	3 50
Youth's Companion	1 85	2 25

If any paper is desired, not mentioned in the above list, a postal card inquiry will receive a prompt reply. Address,

THE ANALYST PUBLISHING CO.,
19 Park Place, New York.

See Club Rates for Medical Journals on page 491.

The Standard of Excellence.

KINGSFORD'S

OSWEGO

Pure and Silver Gloss



STARCH

KINGSFORD'S
OSWEGO CORN STARCH
FOR
Puddings, Custards, Blanc-Mange, Etc.
THE PERFECTION OF QUALITY.
WILL PLEASE YOU EVERY TIME.
Always ask your Grocer for these goods.

All Postmasters will receive subscriptions for the **AMERICAN ANALYST.**

AMERICAN ANALYST

FOR THE

FAMILY AND CONSUMER.

A SEMI-MONTHLY ADVOCATE OF PURE FOOD AND THE SUPPRESSION OF ADULTERATION.

Office, 19 Park Place.

[Entered at the Post Office at New York, as Second Class Matter.]

VOL. IV.—No. 24. NEW YORK, DECEMBER 15, 1888. Whole No. 96

CONTENTS.

A Christian Scientist..... 500
American Dinners..... 495
Answers to Correspondents..... 498
Beware of the Cat..... 497
Corks, Home Made..... 497
Domestic Dietetics..... 500
Editorial..... 498
Government Beef Inspection; In Behalf of a Pure Food Law; Milk, Microbes and Consumption; What Stars We See; Adulterated English; The Baker's Profit.
Glucose, How Made..... 497
House Sanitation Vagaries..... 500
On Behalf of our Chemists..... 499
Metals, Rare Chemical..... 496
Physical Caution..... 500
Pure Food..... 501
Microbes..... 501
Refrigerator Risks..... 496
Submarine Flames..... 500
Weight, How to Regulate..... 501
Zaroff's Revenge Complete Story..... 493

ZAROFF'S REVENGE.

"Will you not think it over for a few days? I would try and make you happy." The speaker's voice trembled with intense earnestness, and it should have told the woman to whom the words were addressed how much the plea meant to him, but alas! she did not care even to feign interest. Sitting beside him in the pride of her youth and beauty what was it to her that this man should offer her his world-worn old heart? Why, the idea was ridiculous—to her.

"Come, count," she answered lightly, lifting laughing, slightly scornful, eyes to his face, "shall we not change the subject? Ah, if you persist in telling me how much you adore me, I shall end by paying you the compliment of almost—believing you.

The red blood leaped to the withered cheek and the man's eyes flashed at the disdainful reply. Controlling himself with a visible effort, he answered, as lightly bending forward and fixing flashing eyes on the distainful face: "Well, Madame Orsilloff, say that you do pay me the compliment of almost believing me; yes, believing the old Russian diplomat, what then?" Reaching out his hand he nervously picked a few blossoms of a mass of Parma violets that lay in her lap and with which her white fingers were idly toying.

"Nonsense, count, you are an old man and should be at your prayers rather than thinking of me."

"Your husband was an older man than even I," he pleaded.

"Yes, my husband; but then you know he is gathered to his fathers, and, as a good subject of the Czar, is no doubt enjoying himself as an angel now," Madame Orsilloff said, mockingly. Then her manner suddenly changed and she asked with passionate resentment: "Why—why did you mention him? You know my father sold me; yes, sold me to that cruel old man, because he stood high at court, and would bring our impoverished family wealth and power. My despair, my entreaties were vain. I was forced to submit, and for two weary years I led a wretched life, and then he died and I was free; yes, free!" and she drew a long, delicious breath at the thought, then continued more quietly: "I fled from Russia, where the most miserable days of my life were spent, came to Paris with vast wealth, and a sweet hope that at last I should one day be the wife of the man I love, and loved when they forced me into that wretched marriage. But why should I tell you all that is in my heart? Enough! Let us speak of the ball to-morrow at your friend's house."

"No. We will not speak of a ball," he cried passionately, and the flowers he held fell to the floor, crushed, ruined. "I tell you I will not take 'No' for my answer. You shall listen to me."

"Count Zaroff, you forget yourself." The tone was cold and disdainful; but he rushed on as though she had not spoken.

"Come, it is better to make a friend than an enemy of me." There was a covert threat in his words, and it roused the proud Russian spirit in the woman. She sprang from her chair and faced him, the soft mass of flowers falling on the floor between them.

"How dare you? Leave my presence instantly How dare you?" she repeated in intense anger. Count Zaroff knew the stake for which he played was lost. Yet he had one arrow and he shot it with a steady hand straight home.

"I beg your pardon most humbly, Madame Orsilloff. As you say, I did indeed forget myself," and he bowed low with hat in hand. "I had the misfortune not to express myself well. I meant to do you a kindness. Young officers,"—quietly these words were said, "yet he fixed his keen old eyes pitilessly on the indignant young face, and watched the color and fire die out of it as he continued—"Young officers, you know, are sometimes hot-headed. There social position not always saving them, it is sometimes as well to have a friend—well, such a friend as I could be. That is what I meant to express when I had the misfortune to offend. I take my leave with the hope of seeing you to-morrow night? By that time I hope you will have forgiven me."

He was gone before she could question him, and she stood for a few moments hardly drawing her breath as she went rapidly over the conversation. What could he mean? or had he any purpose other than to frighten her? Could Ivan—? No, no; Ivan loved her too well. He would keep out of danger for her sake, and as she recalled the handsome face of the dashing young officer, and thought of the letter reposing next her heart, "I am counting the days and hours when I shall be with you, thank God, my darling, never to be parted more," she dismissed her vague fears with a laugh, and stooped to pick up her flowers, burying her face in their sweet depths.

It was the night of the Countess de Thierry's ball. All fashionable Paris was on the *qui vive*. It was to be the greatest social event of the season. In front of the brilliantly lighted mansion crowds jostled and pushed each other in their good natured efforts to see the grand dames arrive. Presently a carriage arrived with horses harnessed Russian fashion, three abreast, and a murmur of admiration burst from the throng as Olga Orsilloff was seen to glide up the steps wrapped in sables a queen might envy, and a hush fell on the room as she entered, a perfect dream of beauty. The women knew she wore a triumph of Worth's and that her diamonds were magnificent. The men saw only a rarely beautiful woman dressed in golden yellow, the acknowledged queen of the season, who knew full well her beauty and power. Count Zaroff watched her, and as she passed him with a slight inclination of the head he smiled—a smile that boded ill.

Presently a servant bearing a card made his appearance. It was a tiny card, with a few scrawling characters written upon it. He carried it direct to Madame Orsilloff. She glanced at it carelessly, but as she read the scrawl, "Peter Roltsoff prays that Madame Orsilloff will see him," the color forsook her face. Hastily ordering the man to be shown into the waiting-room, she followed almost instantly, her heart torn with anxiety. What was the meaning of this man Peter, young Ivan's trusted servant, being in Paris, and why had he followed her to this house? On entering the room she was surprised to find the man waiting there was one of her own servants. In answer to her anxious questions he replied that Peter Roltsoff had reached her house too exhausted to go further, and had sent him with his card, saying that the matter was urgent.

Madame Orsilloff was soon being driven rapidly to her home. On gaining the house she dashed open the carriage door, not waiting for the servant, and fled up the steps. Peter Roltsoff met her sorrowfully. Dragging him with her into a room from off the hall, she stood before the old man quivering with fright. Sharp and incisive were her words: "The worst." Sorrowfully the answer came. His young master had been arrested at night and had never returned. His estates had been confiscated and the old servant had made his way as best he could to her. "The charge," she gasped. "A nihilist." With a shrill cry she fell to the floor. Very gently the old man lifted her into a chair, bending over her in an agony of entreaty not to lose heart, but too keep up her courage, for there was work for them to do, if they were to free the master. She gently pushed him away and strove to gather strength to meet the blow, tried to think what to do. Time had been lost and every hour counted. Again and again she made the man repeat his story until her dazed brain could comprehend.

Oh, God! how well she knew Russia, and how well she knew the way the Czar's agents worked, so silent, so merciless! All these last bright days she had been so happy in her love Ivan had been wearily waiting his trial, and even to-night she had been in a scene of mirth and gaiety, and where, where was he?

LACTOPEPTINE,

The most important remedial agent ever presented to the Profession for Dyspepsia, Vomiting in Pregnancy, Cholera Infantum, Constipation, and all Diseases arising from imperfect nutrition.

Lactopeptine precisely represents in composition the natural digestive juices of the Stomach, Pancreas and Salivary Glands, and will, therefore, readily dissolve all foods necessary to the recuperation of the human organism.

CAUTION

We regret that we are compelled to caution the profession in prescribing Lactopeptine, but very careful investigation has proven to us clearly the necessity of it. Substitution of cheap and worthless compounds are being made in many cases where Lactopeptine is prescribed.

Lactopeptine is always UNIFORM, and its effects are SPECIFIC, and no one has ever been able to imitate its digestive value. If you do not obtain positive results when you prescribe Lactopeptine, you can be sure that some substitution has been made, and in such cases it may be necessary for the physician to prescribe Lactopeptine in the original ounce package to insure certainty of obtaining the genuine article. We can confidently make this assertion, knowing the scrupulous uniformity in digestive value of every ounce of Lactopeptine.

Lactopeptine has always been kept strictly in the hands of the Medical Profession, never having been admitted in any publications but Medical Journals. It is prescribed by the most intelligent and educated physicians in all parts of the world, and there are but few physicians who have ever used Lactopeptine that will not agree with the late Prof. L. P. Yandell, when he says: "Lactopeptine is one of the certainties in medicine, and in this respect ranks with Quinine."

In the various forms of Dyspepsia, in vomiting in Pregnancy, and in Mal-nutrition of children, there is no known remedy so positive in results.

P. O. Box 1574. THE NEW YORK PHARMACAL ASSOCIATION, NEW YORK.

Count Zaroff sat smoking a cigarette and drinking a small cup of black coffee. He had left the ball soon after the disappearance of Madame Orsilloff, and, as he sat smoking, not a sound in the street escaped his keen ears. He listened and waited. At the sound of a rapidly driven carriage stopping at the house, he smiled, settling himself more comfortably in his chair. Suddenly the heavy portieres were thrust aside and Olga Orsilloff stood before him. Her cloak, released from the nervous grasp of her trembling hands, fell away from the white shoulders, as she stood for a moment grasping the folds of the curtains, endeavoring to gain strength to speak. What a picture she made, with the light shining on the gold of her gown, the diamonds gleaming in her yellow hair, and the dark curtains bringing out the snowy beauty of neck and arms.

The man's heart leaped within him as he thought how he held her in his power. He had risen as she entered and was waiting for her to speak. There was no time for the ordinary courtesies. They had met to do battle. How would it end—he strong and cool, on the watch to gain an advantage; she a woman, slight and lovely, battling for the man she loved? Slowly she crossed the room and stood before him. Vainly her lips tried to form sound or words. She could but lift her trembling hands in pitiful appeal.

"Olga Orsilloff," he said, coldly and formally, "it is useless for me to pretend I do not know your errand. I was fully acquainted with the arrest and *conviction*—— of——." A cry interrupted him and Olga darted forward and grasped his arm with small hands of steel. "Convicted!" she gasped. "Come," he said, "I will show you the papers. It will save me the pain of telling you the details. He led her over to a desk, drew a bundle of papers from a drawer, pushed her gently into a chair, placed them before her, and said as curtly as before: "All you wish to know is there." Slowly she forced herself to read every line. Not a sound, not a cry, broke the stillness; only the color went from her face, leaving it as white as the sheets on which the fatal lines were written. As soon as she learned the bitter truth that Ivan Pitrowski was a nihilist, her nerveless hands could no longer hold the paper, her staring eyes no longer see. Groping her way to where Count Zaroff stood, she stumbled and would have fallen had he not caught her. She lay in his arms, close against his madly beating heart.

All unconscious of where she was, or that her hands were grasping his coat, or that she clung to him in a very passion of fright, she lifted her stricken face and gasped: "His sentence was——" For one instant

MELLIN'S

TRADE MARK.

FOR INFANTS & INVALIDS.

FOOD

The Only Perfect Substitute for Mother's Milk.

A Copy of our Book,

The Care and Feeding of Infants

will be MAILED FREE to any address.

DOLIBER, COODALE CO.,

40-41-42-43 Central Wharf, Boston, Mass.

STEVENSVILLE MILLS.

IMPEROYAL VACUUM COOKED **OATS.**

IMPEROYAL VACUUM COOKED **WHEAT.**

M. D. STEVENS'

SOLE MANUFACTURER OF

ABSOLUTE PURITY.



HOUSEHOLD NECESSITY.

ONE MINUTE IN PREPATATION.

IMPEROYAL VACUUM COOKED **HOMINY.**

IMPEROYAL GRIDDLE CAKE **FLOUR.**

Recommended by Eminent Physicians and Chemists.

☞ Adapted to all kinds of Pastry, Bread, Biscuit, Griddle Cakes, etc., and its absolute purity and freedom from Alum, Terra Alba or any injurious ingredient, makes it a necessity in every household. No lady can afford to be without it. Sold by best Grocers.

M. D. STEVENS,

Room 18, Mercantile Exchange,

Cor. Hudson & Harrison Sts., NEW YORK.

Doctor

Cupid's

Advice.



It is a full and complete diet, prepared with water only. Always uniform in quality and the most economical food available.

THOMAS LEEMING & CO., SOLE AGENTS, NEW YORK.

TO THE PUBLIC.

We sincerely regret our publication of Dr. E. T. DARBY's endorsement of Dr. Mason's Combination Tooth Pick; as we now learn that his expressions were intended only for the private inspection of the inventor.

HORSEY MFG. CO., Utica, N. Y.
Manufacturers of the Celebrated



HARTFORD'S PROMINENT PHYSICIAN,
Dr. E. W. KELLOGG, expresses his appreciation, as follows:

"It is my opinion that from a hygienic point of view, the Ideal Felt Tooth Polisher offers decided advantages over the former methods of caring for the teeth; **and as a beautifier of them it is unrivalled.**"

Prices:—Tooth Picks, 10c. per Case. Felt Polishers, 18 boxed, 25c. Holders for same, in bone, horn or celluloid, imperishable and attractive, 35c. **For Sale by all druggists, or mailed on receipt of price by**

HORSEY MFG. CO., Utica, N. Y.

BURNETT'S
PERFECTLY PURE HIGHLY CONCENTRATED
Standard Flavoring
EXTRACTS

THE superiority of these Extracts consists in their

PERFECT PURITY AND GREAT STRENGTH.

There is no subject which should more engross attention than the purity of the preparations which are used in flavoring the various compounds prepared for the human stomach.

They are not only true to their names, but are prepared from fruits of the best quality, and so highly concentrated that a small quantity only need be used.

JOSEPH BURNETT & CO., Boston, Mass.

the man almost relented, then his heart hardened. No, not now when the object for which he had schemed and worked was almost won. No, he would go on to the end and conquer. Deliberately he uttered the word 'Siberia." Then indeed there rang out a cry terrible in its agony. She fell to the floor at his feet. Wrapping her arms round his knees, in a very frenzy of despair, she pleaded: "Mercy, mercy, Zaroff! He is so young; he has been led away. All I have I will give for his life. Oh, God! give him back to me. We will leave the country, Zaroff. Zaroff, see I am at your feet, begging for mercy. Any price I will pay, only give him his freedom—take all I own and let him go."

He stooped and unwound the clinging arms. Holding her fimly, he forced her upon her knees, so that he could look into her face as he said rapidly: "I can help you, Olga, should I choose, but I have my price, which you must pay for his freedom." Her wild eyes sought his face in intense inquiry. "I do not require your wealth. What would it be to me? I have enough. You think I have schemed to rob you of the man you love. Well, I have; and the rash young fool has helped me. For what have I worked? Why, for you; you that have treated all my advances with disdain. You mocked my love and despised me, until now I do not know if I hate or love you most. This only I know that I have you in my power, and that you plead for mercy you did not show to me. I will show none. Pay me my price. Promise to become my wife within ten days, and on that day you are Countess Zaroff. Ivan shall be free. I have the power and will keep my word. Refuse, and he goes to the mines, to the horrors of Siberia, and remains till death sets him free. Now decide.

He flung her from him roughly, and paced hurriedly up and down the room, now and then casting a glance at her as she lay, her arms outstretched, in a very abandon of despair. Presently she stirred. She had made her choice. He knelt to catch her words. In short, sharp gasps they came: "Promise—freedom—no harm to befall him afterwards—free to leave Russia."

"I promise." The reply carried conviction to the tortured heart. There was a long silence. Naught but the ticking of the clock could be heard. Then the white lips moved, and he bent his head to listen, fixing his flaming eyes intently on the ashen face. He heard the words: "I will pay the price," breathed rather than spoken. 'Twas enough. Zaroff had won. Ivan Pitrowski would be free, but at what cost!

Ten days had passed. Count Zaroff dressed for his wedding awaited his carriage. Yet at the moment of the fruition of his schemes the thought flashed through his mind, what if the man he had wronged ever crossed his path.

He kept his word. The same day Ivan Pitrowski's doors were opened. He was a free man, pardoned on condition that he immediately leave Russia. Peter awaited his liberation, bearing a letter from Olga Orsilloff—a pitiful letter, telling the price she had paid for his freedom, adjuring him if he loved her, to flee from Russia, and in some other land make for himself a new life. No word of her despair, yet he knew all.

Count Zaroff, if you journeyed to a desolate stretch of country just beyond St. Petersburg, your thought would be answered. Ivan Pitrowski lies shot through the heart, his young blood dyeing the snow, his white face turned to the dreary sky, with the shadow of the early Russian night coming on.—*Albany Journal.*

AMERCIAN DINNERS.

SOME OF THE FASHIONABLE FANCIES OF THE PRESENT SALOON.

A prominent New York caterer, in a recent conversation reported in the *World*, indulged in the following comments upon American taste in the matter of dinner entertainments: "Within the past few years American taste in dining has improved, or, rather, has become more Continental. This is in a measure due to the habit rich American people have acquired of sponding a few months of each year in France and Germany, where the good cooks hold forth. By mingling with the swell foreigners they have learned the art of dining in its most refined phases, and naturally they have copied after many things which they saw and which have the effect of toning down the rough edges of our national school of cooking. Of course the shoddy American—by that I mean the man who has, to use the slang phrase, "struck oil," and made a fortune overnight—is always on the lookout for display. He wants everything on the grandest scale possible, to show his guests how lavish he can afford to be in entertaining them. On the contrary, refined people take particular pains to have their tables plainly elegant, with as little decoration as possible, but then they want the best dinner that can be prepared, and price is never questioned. This winter plain, short dinners will be the fashion, and I am sure the change will meet with great favor. Often it happens that people are placed near each other at the table who have not the slightest affinity, and the result is that they spoil the harmonious effect of the repast. Dinners, you know, are social gatherings, pure and simple. Now, by serving the solid courses in one room, where it can be conveniently done, and the delicacies in another, it gives the guests a chance to change about and choose the company to their own liking. Menus, too, will be sparingly used this season. Fashion has jumped upon them and decreed that they are good enough for the restaurant, but out of place in the home circle. This is very sensible, and I shall do all I can to further the abolition of the dinner card, which is more or less an advertisement of what your guests may expect to get. A good dinner should never make the diner sleepy and tired. On the contrary, it should brighten him up, and after the last course is disposed of he ought to feel that he could start over again and eat the courses through a second time.

"Our taste in the selection of wines will always be American. The American people are champagne drinkers, and don't care a great deal for fancy French Burgundies, Rhine wines or Moselles. For that reason at many dinners champagnes are served with every course. The other wines may be used, but each guest has a champagne glass before him, which is filled at the outset and is never allowed to become empty. The most adept cook can't fool an experienced diner. He knows a good thing when he sees it and makes up his meal from those dishes which suit his palate and digestion. Nothing can swerve him, and in his eating he is as firm as the rock of Gibraltar. Two or three courses satisfy him, and the remainder of the time he whiles away in making himself agreeable, which is the reason why his company is so much sought after. I am happy to say that another radical change will be made in the manner of serving dinners this year. From time immemorial it has been the custom to serve the roasts about the middle of the dinner. This is a mistake. Roasts, like the other solid dishes, not excepting the game, should be served as early as possible, and most caterers have come to that conclusion. All the gimcrack decorations, like plush embroidery and tall cut-glass pieces, will be missed this year. There is a tendency to flatness, and the table of the ultra-fashionable will be decorated in accordance with that fashion. The glassware and fruit receptacles are of the low, spreading order, much more plain than in former days. The early English candelabra are again coming into vogue, and the soft, mellow light they cast on the spotless linen and sparkling crystal has a very charming effect. A caterer does his work with great system. All the dishes are prepared by our chefs in the place and carried to the house in sealed chests. An hour or so before the time set for dinner we take possession of the family kitchen and all we want is a hot fire. We have our own help and do not require the assistance of any of the servants. In less than an hour the first two or three courses are ready for the table, and the remaining ones are cooked as the meal advances. We seldom provide the wine, leaving that part to be attended to by the hostess, who generally knows the tastes of her guests better than the caterer, and who prefers the stock of her cellar to any that we could furnish. We even supply our own table service, and seldom make use of any belonging to the household. The average cost of a dinner is from $6 to $8 per plate, although when game, terrapin and fruit are dear, it may be as high as $12 per plate, but never higher than that. Japanese swallows'-nest soup will be one of the features of next season's swell dinners. The nests are of a grayish gelatinous consistence, and cost from 20 to 25 francs per piece. The swallows build their nests from a peculiar vegetable fibre and buds, which they chew up. The soup hasn't been tried yet to any great extent, but it is popular in France, where it first appeared, and is likely to meet with favor here."

ARTIFICIAL EMERALDS.—At a recent session of the French Academy of Sciences, Mr. Daubree, in behalf of Messrs. Hautefeuille and Perry, presented an interesting note on the production of emeralds. These learned chemists have succeeded in producing very beautiful crystals of emeralds by fusing silica, alumina and glucina (with traces of oxide of chromium) with acid molybdate of lithia. The materials were heated to a temperature of from 600 to 700 deg. for fifteen days. There were obtained fifteen grams of small crystals of about a millimetre, having all the mineralogical and physical characters of the natural emerald. The longer the operation is continued, the larger the crystals become.



THE RARE METALS.

SOME OF THE MYSTERIES OF CHEMICAL SCIENCE.

Chemists have found about seventy-one different forms of matter, which they call elements, and are apparently simple forms of matter incapable of further subdivision. We say *about* seventy-one different forms, because some of these so-called elements have been but little studied, and resemble each other so closely that they may be proved to be identical, or to be mixtures of still simpler forms. The question of the true nature of the elements has been frequently discussed in these columns, but is not connected with the present subject. Of these seventy-one elements, fifty-six are metals and fifteen metalloids. It is rather difficult to exactly define a metal; but their general appearance is familiar to every one, and a special article upon this question will be found in the *Science News* for March, 1887. Only about thirty elements are at all common, and not more than twenty are met with in daily life. Sixteen of these are of a metallic nature, leaving forty different metals which are rarely seen outside of a laboratory or mineralogical cabinet, but which in their chemical relations are of considerable interest. Beginning with that group of elements containing the familiar substances sodium and potassium, we find three other metals closely allied to them—lithium, rubidium, and cæsium. Lithium is more abundant than the other two, and is found in considerable quantity in many mineral spring waters, including those at Saratoga. It is the lightest solid element known, having a specific gravity of 0.59, or about one-half that of water. Cæsium and rubidium were also first discovered in mineral water by Bunsen and Kirchoff in 1860. There were only two or three grains of the metals to a ton of water, and their detection would have been impossible, except for the spectroscope, which showed the blue line of cæsium and the red one of rubidium, when even this minute quantity was present. The metals themselves present no especial peculiarity of appearance, and could hardly be distinguished by sight from a piece of sodium or potassium. In the calcium and magnesium group, we find barium and strontium, which, while not very rare, have but few practical uses. Strongtium is largely used for making red fire, while barium gives a green hue to the flame. Cadmium is a metal resembling zinc, and is only important as being a constituent of the fusible alloys used for safety-plugs in steam-boilers, automatic sprinklers, etc. Aluminium is no longer an uncommon metal; but there is a long list of similar metals which are quite rare, and of little or no practical importance. They resemble each other very closely, and it is by no means certain that they are all distinct elements. The elements yttrium, urbium, terbium, phillipium, ytterbium, and samarium are very slightly differentiated, and are compared by Dr. Crookes to the refuse of the universe "heaped away in some cosmical lumber-room;" while the deceptive nature of another supposed element is expressed by its name, decipium. Gallium and germanium were discovered by French and German chemists respectively; while scandium is remarkable, as agreeing in its properties with a theroretical element which was required to fill a vacant place in the "periodic system" of the elements, but was until quite recently unknown. Gulcinium is found in the emerald beryl, and some of its salts have a sweetish taste. Zirconium is the base of the rare minerals zircon and hyacinth, and thorium is remarkable for its specific gravity (9.4) and the highest atomic weight (232) of any element. Cerium is used to a small extent in medicine, and lanthanum and didymium closely resemble it. The name "lanthanum" means "to lie concealed," and was given on account of the difficulty of its detection; and didymium closely resembles it, as the meaning ("twinned") of its name implies. Indium was discovered by the blue line which it gives in the spectroscope, and uranium is only used for the purpose of coloring glass and porcelain. Thallium is a metal resembling lead, and gives a green line in the spectroscope, by which it was first discovered. Titanium is related to tin, and is an undesirable constituent of certain iron ores. It also imparts a yellow color to glass and porcelain. Tungsten is a valuable addition to steel; and tungstate of soda, applied to wood or clothing, renders them uninflammable. Niobium and tantalum resemble each other very closely, but are of little importance. Molybdenum belongs to the iron group, which also includes nickel, cobalt, and manganese. Vanadium is allied to antimony and nitrogen, and has been found to possess a remarkable oxidizing power. It is extensively used for the production of aniline black in dyeing and calico-printing establishments. About one per cent. of vanadate of ammonia added to an infusion of nut-galls makes a very superior black ink, which, however, will partially fade in time. We come, last, to the rare metals of the platinum group, of which iridium is the most useful, as, on account of its excessive hardness, it is used for the points of gold pens and stylographs, the knife-edges of balances, etc. Osmium is one of the most poisonous substances known; while palladium is remarkable for the readiness with which it combines with hydrogen, apparently forming an alloy, and indicating the metallic nature of that gas. It has lately been used as a substitute for steel in certain parts of watches, to avoid the effect of magnetism on the works. Ruthenium and rhodium are of no special interest. There are probably many other metals in existence which remain to be discovered. We are familiar with but a small portion of the crust of the earth, and know nothing of what there may be at a little distance below it. In the "periodic system" of the elements there are several gaps yet remaining to be filled, and elements possessing the required properties may some time be discovered. Whatever new elements may be found, will undoubtedly occur in very small quantities; but at present there seems to be no limitation to the number of "rare metals" ready to indicate their presence in the spectroscope, beakers, or crucibles of the chemist who patiently searches for them.—*Pop. Science News.*

REFRIGERATING RISKS.

THE USE OF THE ICE BOX OBJECTED TO.

The ice-box may perhaps be regarded as scarcely a timely topic when it is being so generally discarded in deference to the feelings of the expected visitor, Mr. John Frost. To enumerate its merits now would be like lauding heating apparatus in midsummer. But when the tone is not laudatory perhaps the period when the refrigerator is being retired to the attic or cellar is a fit and proper one to tell what one knows or thinks he knows against the temporarily-deposed potentate. In a paper read before the section on sanitary science of the Medical and Chirurgical Faculty of Maryland, at its ninetieth annual session, Dr. John Morris had the courage to say last April, while discussing insanitary agents in common use, that the ice-box is particularly objectionable. Meats and poultry he declared to be especially injured by being put on ice, which, he added, simply arrested the natural law of change, and when these foods are brought into a normal atmosphere decomposition sets in at once, and they are rendered unfit for consumption. The same rule held good, only in a greater degree, of fish, eggs, milk, fruit, and butter—in fact, all food he declared to be injured by contact with quantities of ice. Dr. Morris' remarks on eggs, while the most surprising to many laymen, are the easiest for one possessing either a delicate sense of taste or a microscope and the facilities for its use to appreciate and verify. He says these popular articles of diet are perhaps the most liable to dangerous change when kept, as they usually are, for months before being exposed for sale. They do not become over-ripe and offensive in the old-fashioned way, but they are invaded by a peculiar fungoid growth, which can only be detected by the microscope, but which may be recognized by a peculiar musty taste, unless the palate of the eater has become educated by long-continued use of the "cooled" product. The egg in this condition is a very unwholesome food, and may lead to serious ailments in persons of a delicate constitution or weakened digestive apparatus. To attack the egg-cooling industry is to assail one of the most profitable industries connected with the produce business. When eggs are very plentiful they are bought up and packed away in cooling houses and kept until a rise occurs in the market through a falling off in the supply. Then the market is stocked from the material first received in store. The ordinary tests are useless when applied to these eggs, the only ones they fail to respond to being those of the palate and incubator; they are of no value as chicken-producers. "Candling" fails to show any lack of translucency, and the oldest inhabitant of the cold-storage wareroom will have lost little or none of its substance by evaporation; hence the floating test is of no more avail than the other. The condition of the surface of the yolk and of that of the membrane lining the shell do give occasional indications of the impairment in the shape of specks of visible mold, but when cooked this is not even apparent. Eggs are not the only articles of diet that are rendered positively poisonous by reason of being kept by middlemen in cold storage. Milk is getting to be delayed longer on its way to the consumer every day. In Chicago, for example, the custom is for country milk which arrives early one afternoon to be kept in a cooling-room until the next day, when its delivery to customers commences, to end when the supply gives out, but under no circumstances is milk delivered the day of its receipt in the city. If left without any artificial arrest of the natural change, which commenced with its first exposure to the air, it would be good, wholesome clabber or sour milk by the time it is being used to feed infants or qualify tea and coffee with. As it is, the present generation of city residents at least know little or nothing of this delicious and wholesome morsel, for cooled milk becomes offensive when it sours. The cooling of meats with dry air in which salt is diffused is declared by Dr. Morris in the paper before quoted to be not only innocuous but beneficial, though he does not tell just how this is to be done.—*Sanitary News.*

Cold Solder.—To make French cold solder: Precipitate copper in a state of fine division from a solution of sulphate of copper by the aid of metallic zinc. Twenty or thirty parts of the copper are mixed in a mortar with concentrated sulphuric acid, to which is afterward added seventy parts of mercury, and the whole is triturated with the pestle. The amalgam produced is copiously washed with water to remove the sulphuric acid, and is then left for twelve hours. When it is required for soldering it is warmed until it is about the consistency of wax, and in this state it is applied to the joint, to which it adheres on cooling.

GLUCOSE.

WHAT IT IS AND HOW MADE.

The process of making glucose will be best understood by following the corn from the time it enters the factory until it runs out at a spigot, a clear, odorless liquid. The shell-corn is first soaked for several days in water to soften the hull and prepare it for the cracking process. The softened corn is conveyed by elevators to one of the highest stories of the factory and shoveled into large hoppers, from which it passes into mills that merely crack the grains without reducing them at once to a fine meal. The cracked grain is then conducted to a large tank filled with rinsing water. The hulls of the corn float at the top of the water, the germs sink to the bottom and the portions of the grain containing the starch, becoming gradually reduced to flour by friction, are held in solution in the water. By an ingenious process both the hulls and the germs are removed, and the flour part now held in solution contains nothing but starch and gluten. This liquid is then made to flow over a series of tables, representing several acres in area, and the difference in the specific gravity of the two substances causes the gluten and the starch to separate without the use of chemicals. The gluten is of a golden-yellow color and the starch snow-white. By the time gluten has been completely eliminated the starch assumes a plastic form and is collected from the separating tables by wheelbarrowfuls and taken to a drying-room, where it is prepared as the starch of commerce or is placed in a chemical apparatus to be converted into glucose. The conversion is effected by submitting the starch to the action of a minute percentage of dilute sulphuric acid, which, without becoming a constituent part of the compound, produces by its presence merely a miraculous chemical change. This change from starch to glucose is a gradual process, and has four or five well-defined stages. On the addition of the acid the first change results in the production of what is known to chemists as dextrine. If at this stage the acid is neutralized by the addition of lime water, the process is choked and dextrine is the permanent product. If the process is allowed to go on, the acid, however, works a second change and maltose is the result. Here the process can, if necessary, be interrupted by neutralizing the acid by means of lime water, and for some purposes in the art of brewing this is sometimes done. The third and important stage in the chemical change wrought by the action results in the production of glucose, and just here is where the greatest skill of the chemist is required.

The product must show by test that it responds to the chemical formula C6, H12, O6. By comparing this formula with that of starch, which is C6, H10, O5—that is, six parts of carbon to ten of hydrogen and five of oxygen—it will be seen that the sulphuric acid has not added to the starch, but has taken up two parts of hydrogen, and the only gain in the starch is one part of oxygen. The lime water introduced to neutralize the acid forms with it a product called gypsum, which can be removed from the glucose without leaving any appreciable trace. The fourth stage in the chemical process results in crystallizing the liquid, and then the product is called grape sugar. There is a fifth stage, in which caramel, or burnt sugar, could be produced were it of any commercial value. The gypsum, or sulphate of lime, formed by the neutralizing lime water and sulphuric acid, sinks by gravitation to the bottom of the vessel and the supernatent saccharine liquid is drawn off from the top. This is almost pure chemical glucose, but it is still subject to a filtering process through bone-black, and refined in the same way as cane sugar is refined. The bone-black has anything but the appearance of a purifying agent, but possesses the peculiar property of attracting to itself all coloring matter. The glucose, passing through a labyrinthine system of filtering, is drawn off through spigots in the lower part of the building, and is ready to be shipped away in barrels. To give the glucose the appearance of cane syrup, as well as to impart some of the characteristic taste, a small amount of that syrup is added to suit the fancy of buyers. To make grape sugar the glucose is dried in rapidly revolving vessels, from which much of the moisture escapes by virtue of the centrifugal force. Neither the glucose nor the grape sugar is used for domestic purposes, although either one is about two-thirds as sweet as the sweetest cane sugar. Glucose is chiefly used for fermenting purposes, and of late years has become valuable te the brewer in making beer and pale ales. It is also largely used in mixtures with cane syrups and molasses, and esteemed more wholesome than the cane product which is, at best, only a side product or residue in the manufacture of sugar.

BEWARE OF THE CAT!

DOMESTIC ANIMALS AS VEHICLES OF INFECTION.

It is reported from Chicago that a by no means inconsiderable outbreak of scarlatina has been brought about by a cat, which acted as the means of conveying the infection. It has long been known that almost anything which can serve as a vehicle for carrying the desquamating epithelium of scarlatina patients may act as an intermediary between sick and healthy; and althongh recent study of the specific fevers tends to show that the period in which these diseases are most likely to be communicated is the acute stage rather than that of convalescence, it must be admitted that some of these diseases can be conveyed by such methods as the reception and subsequent discharge of infectious material from the coat of a cat nursed by patients. But that anything like an outbreak of scarlatina should be directly brought about by such a cause is contrary to experience, which goes to show that this disease is not often communicated from one person to another through the agency of a third party who is free from the disease; and it is far more probable that any extension of scarlatina in the case referred to was due to infection contracted directly from the first person to whom the disease was conveyed. But our main object in referring to the incident is to draw attention to the fact that the domestic animals do constitute a distinct danger to man, in so far as some of the specific infectious fevers are concerned. As yet we know nothing about any disease in the cat which can lead to scarlatina in the human subject. But it is probably highly different as regards diphtheria, for a number of instances have been placed on record in which, while diphtheria has been prevalent in the human subject, a similar, if not the same disease, has been ascertained to exist among cats; and it is certain that in some prevalences there has been close association between the human sick and the affected animals. We are at present only just on the borderland of a wide subject—namely, that of the relationship of diseases of the lower animals to diseases in man; and we may possibly learn hereafter that, apart from the origin of infective diseases in the lower animals, the latter may serve as media for communicating infections to an extent as yet not understood. Certain it is that the manner in which dogs, cats, and other domestic animals are at times fondled by those to whom they belong, and to whom they become attached, is not free from risk.—*Lancet.*

CORKS.

AN IMPORTANT HOUSEHOLD INDUSTRY IN GERMANY.

In former issues of the AMERICAN ANALYST we have described the manner in which cork is procured from the bark of the cork oak, in Spain and Portugal. The manner in which the crude material is fashioned into the little truncated cones which serve as stoppers for druggists' vials and for bottles large and small, is quite interesting, and as it possibly is not familiar to many of our readers, we reproduce below some of the essential details, condensed from an article on the subject in the German journal *Gartenlaube*, a translation of which appears in the December issue of the *American Druggist.*

The use of cork-wood for stoppering bottles does not seem to date back further than the fifteenth century. Previous to that time much harder and tougher substances were used for such purposes. Bremen appears to have been the first commercial city which imported cork-wood from its more southerly home, and applied it technically. This may be concluded from a report printed in the State Almanac of Oldenburg of the year 1789, in which it is stated that the industry of cutting corks was already established by a Bremen merchant named Hensch, in the beginning of the preceding century, at Stuhr, a village in Oldenburg, situated about one mile from Bremen. From Stuhr the industry spread over the lowland of Oldenburg, and gradually became independent of Bremen. Among other places, a cork factory was established at Hasbergen, near Delmenhorst, by Friedrich Cordes, who had learned the art under Hensch, of Bremen. In 1786, the brothers Cordes employed 26 workmen, quite a large number for that period. Gradually other factories sprang up, but during the last thirty years most of these have been transferred to Delmenhorst, which has become the chief centre of the cork industry of Germany. The great difference between the several grades of commercial cork-wood may be seen from the price, which runs from about $2.50 to $37 per hundred kilos. The best quality, suitable for wine and champagne corks, comes from Catalonia and a few other Spanish districts, and also Estremoz and several other places in Portugal. Some very good grades are also furnished by Algiers. But most of the other cork-wood collected in Portugal is so soft that it is chiefly useful only for beer and druggists' corks. After the cork-wood has reached the manufacturer, it is first sorted, the best qualities being reserved for wine or mineral water bottles.

In the factory of Cordes and Ellgass, each workman receives usually 50 kilos of cork-wood assigned to him at a time, from which he is expected to produce 20 kilos of large bottle corks and 15 kilos of small druggists' corks. The remainder is allowed as waste. The thinner cork-wood used for druggists' corks has usually a much thicker bark and furnishes more waste. The workman first cuts the wood into strips corresponding to the length of the corks to be made from it. Next he detaches the bark, cuts the strips into cubes, and from these he cuts the corks. This he does by means of two sharp knives, with broad blades, one of which is used for cutting into strips and cubes, the other for round-cutting. He uses no other tools. Considerable judgment is necessary to adjust the sizes of the strips and to select the various portions so as to obtain as large and perfect corks, and as many of them as possible. Even the smallest piece which will yield a cork must be utilized. A skillful workman can turn out each day, about 1,500 bottle or 2,000 druggists' corks. The work is not done in a factory, but at the workman's home, and the whole family often assists in the work. The small corks are usually finished by the children. During the last twenty years, this industry has also been introduced in the neighborhood of Eisenach, where the same home manufacture is carried on. Each workman has a piece of leather strapped around his thigh, upon which he sharpens his knife, which becomes rapidly dull by cutting the soft, porous wood. Upon the chest he carries a large square piece of cork-wood, suspended by a strap around the neck. This he uses as a support when stripping off the bark. Before each cutter is placed a willow basket, into which the finished corks are thrown. The people engaged in this industry are usually poor, and the wages low, as must naturally be the case where child labor is employed. Machines for cutting cork do not appear to have made much headway in Europe, at least for the finer qualities of cork. For common grades, however, machines are used which can turn out some twenty thousand corks in ten hours. After being delivered in the factory, the corks are passed through graded sieves for the purpose of separating the different sizes, and afterwards they are sorted over two or three times, to separate the grades. Champagne corks, which receive their peculiar shape only when driven by power into the bottles, are almost exclusively manufactured in Spain and France. Of late years, they are often put together from differently selected small pieces, which are glued upon each other by a peculiar cement, after which the corks are cut to the proper shape. This is done because the finest and softest grade of cork-wood is rather scarce and very expensive, the manufacturers' price for the best quality of champagne corks being about $36 per 1,000. While the localities above-mentioned comprise the most numerous factories, there are, of course, many others elsewhere.

American Analyst,

Published on the 1st and 15th of each month.

Subscription, - - - - - - $1 per year.
Single Copies, - - - - - - - 5 cents.
Subscriptions to foreign countries, - $1.50.

Remit by Express Money Order, Draft, P. O. Order, or Registered Letter.

Advertising rates on application.

THE ANALYST PUBLISHING CO.,
Publishers.

H. LASSING, M. D.,
T. P. McELRATH, } *Editors.*

No. 19 Park Place, ... New York.

NEW YORK, DECEMBER 15, 1888.

CORRESPONDENTS AND EXCHANGES.

Please direct all business communications to

THE AMERICAN ANALYST,
19 Park Place,
New York.

ANSWERS TO CORRESPONDENTS.

SILEX.—The manner in which large cylinders of window glass are now cut is by encircling the cylinder with a fine wire, which is then heated to redness by an electric current, and a drop of water being allowed to fall upon the hot glass, a perfectly clean cut is obtained. The old method was to draw out a fibre of white-hot semi-molten glass from the furnace by means of tongs, and to wrap it round the cylinder.

M. F., Bethlehem, Pa.—The order of "The King's Daughters," founded by a circle of ten New York ladies, aims to embody the highest precepts, put in practice principles at once the grandest and simplest, and realize ideas of all that is most earnest, tender and strong in womanhood. The order numbered in April last 10,000 members. Before the end of May the membership had doubled, and now the order numbers 40,000 enrolled members, with a probable contingent of 10,000 more which have not reported to central officers.

BREWER.—The name "ale" was probably introduced into England by the Danes, as the word is still the name for malt liquors among the Scandinavian nations. The Anglo-Saxons used the word *beor* until the irruption of the Danes, but the word *beor* was gradually disused, and the name *ale* was general until the introduction of hops from Germany in the reign of Henry VIII. With the hops came again into use the German or Saxon word *bier*, or *beer*, which was first applied only to the hopped liquor, to distinguish it from *ale*—that which was unhopped. Although unhopped ale is no longer in use, both names are retained, but are used roughly to designate strength. In some countries, *ale* signifies "weak," and *beer* is "strong;" but generally the name *beer* is applied to the weaker products of the brewery, and *ale* to the stronger, the varying degrees being designated by X, XX, XXX, and so on.

GOVERNMENT BEEF INSPECTION.

The incessant growth of the eastern portion of the United States, and the steady concentration of population in its manufacturing centres, has invested the question of meat supply for those localities with a significance paramount to nearly every other problem of subsistence. It was to meet this question that the enormous applications of capital were made to the raising of beef cattle in the vast prairie regions on our western frontiers, where land was available for gratuitous occupancy, and where the native wild grasses furnish abundant pasturage, which, by a singular provision, is available in every season of the year. The beef supply was thus provided for, but the subsequent question of distribution gave rise to a number of complex considerations. The remoteness of the cattle ranges necessitated at first driving the herds long distances to find markets, and more recently their transportation by railroad from their grazing grounds in Texas, Colorado and Eastern Montana. The latter mode of transportation was a great improvement, being the quickest, but under the most favorable circumstances the cattle suffer in transit from the combined influences of fright, crowding and irregular feeding. Evidently the more the journey could be abbreviated the less the animals would suffer from the causes named, the effect of which was to break down their condition and correspondingly deteriorate the quality and wholesomeness of the product. To obviate this objection as far as practicable, the immense cattle yards of Kansas City and Chicago were established, where the cattle are liberated from their cramped confinement at the earliest possible moment, and where they are given opportunity to fully recuperate in nerve and frame before being consigned to slaughter. To thus rehabilitate the frightened, shaken creatures, and then, after full restoration of their condition, to kill them, dress their meat with scientific skill, and forward it firm, fresh and juicy in refrigerating cars to the Eastern markets, was an inspiration of capitalistic genius for which every Eastern consumer owes a daily recurring debt of gratitude, which he will readily acknowledge if he reflects upon the sort of meat he would be limited to had the beeves in their live condition been forced to extend their journey another thousand miles or more to points where the slaughtering would necessarily have followed immediately after their disembarkation. These general propositions are clear, and except by a small interested class are universally conceded. Nowhere in the world is more wholesome beef raised than in our Western Territories, and nowhere is such excellent beef sold and eaten as in our Eastern cities. To further insure the best quality of the meat, the cattle at the great centres above alluded to are regularly and scrupulously inspected, and no animal is allowed to go to the slaughterer's block whose fitness for furnishing human food is in the least degree open to suspicion. The Eastern consumer is thus afforded every practicable safeguard against objectionable conditions. The value of this systematic protective policy would be greatly lessened, if not wholly destroyed, were the plan to be adopted that is now being agitated by some of the Eastern butchers, which proposes to prohibit the offering for sale of beef in any other State than the one in which it was slaughtered. Then, in every State, there would a new class of officials spring up. Under the pressure of local influences, their methods would possibly be wholly at variance with one another, and through their antagonistic handling American beef would cease to be, as today, the best, on account of the uniformity of its excellence, in the world, but would be as variable in its quality as are the dialects and the modes of thought and the personal interests of the citizens inhabiting the different sections of this vast commonwealth. A few local butchers would be benefitted, and the entire community of consumers, rich and poor alike, would be sufferers for their sakes. A far better plan is that which the AMERICAN ANALYST has already suggested—the appointment, under the National Department of Agriculture, of a corps of government beef inspectors, to be stationed at all important slaughtering centres, and to act under one uniform code of instructions, to inspect all beef cattle which are to be sold outside the State in which they are slaughtered, or for export. State and municipal laws are already sufficiently stringent to protect the public, but for interstate and export trade National Government inspection would be advantageous. Such a system would be in consonance with the dictates of common sense, would tend to promote the public welfare, and, furthermore, would be in harmonious accord with the principles of interstate comity that now-a-days are too often overridden in behalf of legislation for favored classes.

IN BEHALF OF A PURE FOOD LAW.

Congress re-assembled on the 3d inst., and the time will soon be ripe for a new agitation of the anti-adulteration question. It is greatly to be regretted that so laudable an effort should hitherto have led to such lamentable conclusions. The chief difficulty appears, in past years, to have been the preponderance of personal interests, conflicting with any general proposition that has yet been put forward in behalf of the absolute restriction of adulteration. There has been too much scheming to permit the successful adoption of any effective law on the subject. The result has been the utter failure of every effort, or the occasional preferment over the others of a single interested element of the factional dispute, as in the case of the triumph of the butter men over the oleomargarine interest—one of the most unjustifiable pieces of legislation that has marked the career of the present waning national administration. Then, too, the subject has been too largely entrusted to the handling of a clique of self-seeking demagogues, who have manipulated it for their own glorification, Their bubbles have been long since effectually pricked, but the pure food "movement" remains, thanks to to them, motionless as before. The whole controversy might be quieted, we believe, if Congress would pass a law restricting the importation of low-grade food materials. It is a notorious fact that several European nations prohibit under strict penalties the traffic in adulterated articles within their own boundaries, but sanction the manufacture there of low-grade imitations of the same things for export exclusively to foreign countries, the United States absorbing the largest proportion. If we had a law prohibiting the reception on our soil of foreign goods of any standard not permitted to be sold in the countries where they are manufactured, a great step in advance would be secured in behalf of genuine food reform. Our manufacturers would no longer suffer as now through competition with cheap foreign sophistications, but would find their interest in striving for genuine superiority. The existing Federal laws cover the ground aimed at in respect to foreign drugs and medicines, but do not extend to the numerous food products which are so extensively imported into the United States. Let their scope be widened so as to include those products, and the genuine anti-adulteration party in this country—which is the consumer—will have scored a point of inestimable value.

MILK, MICROBES AND CONSUMPTION.

A committee of the Canadian Parliament has just published a report of its investigations, which is likely to attract wide attention. The committee was appointed to inquire into the existence of tuberculosis in domestic animals, with special reference to the question whether the disease can be communicated from such animals to human beings. The opinions of leading physicians throughout the Dominion were procured, and these have convinced the committee that the disease is communicated to man by means of the meat of tuberculous cattle and the milk of tuberculous cows. This view of the subject is not confined to our Canadian brethren by any means. We read in one of our recent California exchanges that in his address to the Butchers' Protective Association, C. A. Mercer, the government agent of the Bureau of Animal Industry, said: "It will be two years before this country can be thoroughly cleansed of diseased cattle, for from San Francisco Bay to Southern California one half of the State's stock is rotten. Out of every 100 consumptives, twelve acquire the disease from drinking the milk or eating the meat of consumptive cows." The recent Consumption Congress in Paris also adopted resolutions as follows: "The seizure and destruction of all tuberculous animals, whatever may be their appearance of health, should be a constant practice. Every effort should be made, by means of circu-

lars, lectures, etc., to warn the laity of the danger of acquiring tuberculosis by the use of the flesh and milk of diseased animals." It is generally admitted by leading physicians that many diseases are directly caused by the introduction into the human system of the microbe or bacteria characteristic of those diseases, though it does not follow that the introduction of the specific microbe will necessarily cause the disease it is related to. A person exposed to the action of these disease producers may be so healthy as to escape their effects. On the other hand, he may inherit such a special susceptibility to a disease that when its peculiar microbes are introduced into his system they find the conditions perfect for their rapid multiplication and harmful activity. Dr. Austin Flint goes so far as to assert that "it is probable that a person with an inherited tendency to consumption would never develop the disease if he could be absolutely protected against infection with the tubercle bacillus; but once infected, the bacteria multiply and produce the characteristic signs and symptoms." The bacilli often possess wonderful vitality. It is well established that intense cold does not kill them. For this reason there is danger in using ice that has been taken from streams into which sewage is discharged. But they cannot survive exposure to great heat. Therefore the boiling of contaminated water makes it harmless. There is abundant evidence that cows are often tuberculous while seeming to be healthy, and within the past two or three years veterinarians have been impressed by the prevalence of this disease in herds of beef cattle as well as on dairy farms. There is trustworthy evidence that consumption may be and is communicated from such animals to man by means of beef and milk. The only secure method of preventing infection from these sources is by exposing the beef and the milk to intense heat—by thorough cooking and by boiling, and by careful and intelligent inspection of beef cattle and dairy cows. The sooner the government takes the matter of beef inspection in hand the better it will be for the whole community. The proposition has been extensively advocated by the AMERICAN ANALYST, and we are gratified to find our contemporaries of the press and the public sense generally adopting our views with eager earnestness. We may not go so far as the chief of the veterinary school of the University of Pennsylvania, Dr. Hindekoper, who recently declared his belief that nearly one-half of the deaths from consumption in this country were the direct result of eating tuberculous beef. But we consider it fully established that, as the *New York Times* says, "Many deaths due to this disease are primarily caused by the introduction of the tubercle bacillus into the human system from the beef of tuberculous cattle and the milk of infectious cows." If ever there was a subject that demanded the prompt attention of Congress it is this one of the establishment of a corps of national beef inspectors, to be placed on duty at every great cattle centre and slaughtering depot in the United States.

WHAT STARS WE SEE.

Professor Holden, in a recent instructive and interesting essay in the *Century Magazine*, imparts some information concerning the stellar world that will probably surprise many persons. There is a vague impression prevalent in men's imaginations that the stars extend throughout illimitable space. Prof. Holden is inclined to favor a different opinion. He concedes that if telescopes with powers far exceeding our present ones were made, they would no doubt show new stars of the twentieth and twenty-first, etc., magnitudes. But he thinks it highly probable that the number of such successive orders of stars would not increase in the same ratio as is observed in the eighth, ninth and tenth magnitudes, for example. The enormous labor of estimating the number of stars of such classes will long prevent the accumulation of statistics on this question. This much, however, is certain, that in special regions of the sky, which have been searchingly examined by various telescopes of successively increasing apertures, the number of new stars found is by no means in proportion to the increased instrumental power. If this is found to be true elsewhere, the conclusion may be, that, after all, the stellar system can be experimentally shown to be of finite extent, and to contain only a finite number of stars. In his computation of the stars that are actually visible, Prof. Holden conflicts also with the popular notions on that point, and in this latter respect we attach greater weight to his opinion. He says there are in the whole celestial sphere about 6,000 stars visible to an ordinarily good eye. Of these, however, we can never see more than a fraction at any one time, because a half of the sphere is always below the horizon If we could see a star in the horizon as easily as in the zenith, a half of the whole number, or 3,000, would be visible on any clear night. But stars near the horizon are seen through so great a thickness of atmosphere as greatly to obscure their light, and only the brightest ones can there be seen. As a result of this obscuration, it is not likely that more than 2,000 stars can ever be taken in at a single view by any ordinary eye. About 2,000 other stars are so near the South Pole that they never rise in our latitudes. Hence, out of 6,000 supposed to be visible, only 4,000 ever come within the range of our vision, unless we make a journey toward the equator. The telescope of course increases the number of stars brought into vision, and the most powerful instruments of modern times will show more than 60,000,000 stars. Of this number, not one out of one hundred has ever been catalogued at all. In all, 314,926 stars, from the first to the ninth and a half magnitude, are contained in the northern sky, or about 600,000 in both hemispheres.

ADULTERATED ENGLISH.

We find in the *International Review of Adulterations* a popular science journal published monthly in Amsterdam, a paragraph, which we reprint below, concerning a Holland trick that would do credit to the typical down-east Yankee. The paper named is published in the French and English languages. The paragraph quoted is presumably in the latter—but we will not insist upon the general adoption of that impression:

"*An adulteration of . . . hens!* Not only the products of these useful animals have been an object of adulteration. On this head we may mention the following, which occurred in Holland. Two hen-dealers sold, some time ago at *Oldeboorn* a lot of ten pretended to be hens, which afterwards all proved to be cocks. This metamorphosis had been effected, by cutting the crets of the animals and subsequently cauterizing the wounds With an other person two hens were taken out of the hen-house and *conscientiously* substituted by two artificial cocks." The persons concerned wil shortly appear before the Court of Justice."

We regret to learn from the same respectable authority that the Dutch retail grocer is sometimes detected on his native soil in trafficking in adulterated commodities, after the lawless fashion of his compatriots, so designated, in this country. The *Review* says, in another place:

"In mace the presence of a rather considerable quantity of rice-meal has been stated. The shopkeeper pretended, having been deceived by the miller, and the author having observed repeatedly, that the article, being ground, presented quite another mixture, it is indispensable for honest merchants to control the millers, in order to prevent becoming unconscious adulterators."

THE BAKER'S PROFIT.

In a recent issue of the *American Analyst* we published an innocent little paragraph reciting the profit which bakers make on a barrel of flour converted into bread. The *Boston Journal* quoted the article and commented upon it in explanation of the fact that the expenses of the baker's establishment must necessarily reduce the net profit we had estimated. Precisely so. Everybody knows that it costs money to run a business, and of course the expenses must be met out of the returns. What we said was correct, but our commentators seem to think we said considerably more than our language implied, for a number of journals through the country have repeated our paragraph in order apparently to ventilate their views on one of the most palpable business propositions imaginable. As the *Journal's* criticism above referred to is the most discreet, and the briefest of those we have seen, we reproduce it:

This is a scientific way of estimating profits, but not a practical way. A baker does not toss a barrel of flour, as described. It requires two or three men to do it. These helpers cost money. Water costs money. And then there is rent, taxes, fuel, etc., which eat up money. There is old bread not sold which costs money. Horses and wagons to deliver the bread are expensive, and thus the thirty per cent. profit will dwindle to only a living profit, nothing more.

ON BEHALF OF OUR CHEMISTS.

THE DIFFERENCE BETWEEN PROFESSIONAL COMPOUNDERS AND ANALYSTS.

Our esteemed contemporary *The Western Druggist*, in its last issue, indulged in what we cannot help regarding as a very delicate piece of satire at the expense of its constituents.

Referring to that phase of the "food" question, with which it is the special mission of the AMERICAN ANALYST to deal, it says:

"The adulteration of food products is rapidly assuming proportions which will demand the serious attention of the government. A difficult factor in the problem is that relating to analytical examinations. The average American chemist is notoriously incompetent, especially in the examination of organic substances. Others again certify according to the way they are paid or influenced. One condemns any preparation that contains alcohol, another anything that contains starch, another declares that mercury is harmless because recognized in the French Pharmacopœia and so on ad nauseam. These medical college professors have no knowledge of technical processes involved in the manufacture of drugs, or medical preparations, or even of chemicals, except what few specimens they have seen used in the laboratory as re-agents. This class of 'chemical experts'—the Motts, Stillmans, Austuns, Morses, etc.—do more harm than good. Only those thoroughly familiar with technical processes, drugs and other methods of preparation, are qualified to examine these substances. In other words, pharmacists even with less chemical knowledge have vast advantages, and from their ranks the analytical chemist should be drawn."

If we could conceive the writer of this paragraph to be in earnest, we might teach him to distinguish between a doctor of medicine and an analytical chemist—a difference as great as that between the sun and the moon. We might remind him that an analyst neither requires, nor is expected to possess, great therapeutic knowledge, his mission being simply to decompose organic, or inorganic, substances or compounds into their constituent parts, and to state the preparations in which those parts are combined. As for its being essential that he should be versed in all technical details of the processes by which foods or drugs are prepared or manufactured, in order to be reliable in his opinions and reports, can he not faithfully, scientifically and accurately determine the constituents, and pass upon the quality of a sample of beer without ever having been inside a brewery? Can he not distinguish between pure milk and the watered article, or between genuine butter and oleomargarine, without being a dairyman or a farmer, or even without ever having seen a cow or a churn? What is really wanted in an analytical chemist is, in the first place, *efficiency*, and, in the second place, *integrity*; and, providing these be secured, it can be of little moment to the public from what source our analysts of the future are drawn. If they come from the schools of pharmacy, we shall be the first to bid them welcome; but we greatly fear that before this can be made possible, a vast transformation—a perfect revolution—must be effected in the pharmaceutical curriculum. The compounding of pills and draughts; the manipulation of a soda fountain, and the accurate dispensing of unique latin prescriptions, are, doubtless, all tasks, which ne-

cessitate a certain experience with the pestle and mortar, and a properly defined course of technical training. To these, and to no other accomplishments, we believe, can the pharmacists, as a body, lay claim. Take these pharmacists from behind their counters into the chemist's laboratory, and they will be the first to realize that the scientific examination of food materials and the detection of every species of cunning adulteration require an education and attainments more widely different from their own than had seemed possible in the wildest flights of their imaginations! "*Ne sutor ultra crepidam*," is a time-honored maxim which *The Western Druggist* has evidenty forgotten, and which it will doubtless thank us for bringing back to its memory.

PHYSICAL CAUTION.

EXCESSIVE EXERTION INJURIOUS TO THE SYSTEM.

A. H. Brown, who has just been engaged by the New York Police Department to introduce the Boston system into New York, says: The developed muscle is not so good as the normal muscle. Let the muscles remain soft. Exercise, not to abnormally increase the muscle, but merely to keep up the health. When you have succeeded through training and handling weights in making the muscles hard, corded and knotted you have injured yourself. You have, in a measure, destroyed the elasticity of the muscles. What a man requires is a symmetrical development, and that may be secured, not through gymnastic exercise, but through diet, gentle exercise and developing the chest. I am more and more convinced every year of my life that all a man needs in the way of exercise to keep him in health is the use of calisthenics, two-pound dumb-bells and a good stiff walk. Never exercise within an hour before or after meals, and not sooner than three hours after a heavy dinner. Exercise outside, if possible. After exercise take a cold shower if the system will stand it; otherwise, a tepid sponge bath. In general the system is benefitted after a cold shower if a reaction sets in within five or ten minutes after drying with a coarse towel. If, however, the shower is painful, and is followed by a chill and a feeling of lassitude, do not take it, as it is injurious to you. One should on no account exercise in his street garments. Nature gives the longest life to the sedentary animal. The man who vegetates, only doing a moderate amount of exercise, preserving a calm and even temperament, enjoys the longest span.

HOUSE SANITATION.

A CAUTION AGAINST PROFESSIONAL CRANKS AND THEORISTS.

We had just been reading the views of an eminent sanitary expert upon impregnation of brown stone houses with the germs of diphtheria, and had congratulated ourselves upon having selected a modest brick front, when we were horrified to see in one of our latest architectural exchanges that an eminent sanitary expert gives it as his opinion that no brick house can be free from diphtheria, as every brick absorbs and holds from one pint to a quart of water, and is always damp. Not having made a payment on our contemplated purchase, we were once more in luck—saved by a sanitary expert, as it were—and resolved to be very cautious before vacating the little frame shanty we now occupy. Our better half, however, is determined on a move, and may possibly have her eye on a white marble palace or some iron structure, for she succeeded in finding no less than three published opinions of sanitary experts that "a wooden house is positively unfit to live in." One eminent sanitary expert gives it as his opinion that at the expiration of five years every bit of woodwork of a house is alive with all sorts of scientific things. In the latest number of an architectural paper, the great Wingate tells us that even "the vicinity of large quantities of wood is dangerous to health," and talks about zymotic germs and the mycelin of the fungi in a way that is suggestive of bacteria and microbes. We will mention, incidentally, that the house is for sale, and that we purpose tenting out for the rest of the season. Nevertheless, we do not believe in these creeping things. These fellows who see snakes are generally cranks, and it is more than likely that the fellow with an antipathy to bricks had one in his hat, and the block-headed fellow had "a stick in his'n," as a chap can get tight now and "see things" on just that kind of timber. An eminent German sanitary expert says that chemists have succeeded in making a first-rate brandy out of sawdust. A man can, therefore, get a rip-saw and go out and get as drunk as a lord on a fence rail. What is the use of a prohibitory liquor law if a man can make brandy smashes out of the shingles of his roof, or if he can get delirium tremens by drinking the legs of his kitchen chairs? You may shut an inebriate out of a gin shop and keep him away from a tavern, but if he can become uproarious on boiled sawdust and desiccated window-sills any attempt at reform must necessarily be a failure, and we think that the opinion of a sanitary crank upon the jim-jams of a house should be taken with a liberal grain of allowance. —*Cal. Med. News.*

SUBMARINE FLAMES.

A NOVEL SCHEME FOR HARBOR DEFENSE.

According to a report in some of the Philadelphia newspapers, a large company, backed by millions of dollars, has proposed to the Secretary of the Navy a striking and possibly effective scheme for the defense of that harbor and the harbors of other cities from the attacks of an enemy's fleet by shooting ignited petroleum at the unfriendly ships from the bottom of the river and burning them up. The Rear-Admiral has been directed to study closely the harbor of Philadelphia and its approaches. The petroleum defense scheme, the originators of which have induced the Government to make this preliminary examination of the Philadelphia harbor, is a brilliant one in more respects than one. A company has been organized at Washington to develop the plan, and to show its practicability. It is proposed to sink perforated iron pipes in the river and the approaches to the harbor, through which petroleum can be forced to the surface of the river by machinery, and at a high pressure. In this way a fierce stream of blazing oil can be sent down on the enemy's fleet to destroy it or drive it away. It is claimed by the projectors that a flame can be produced in this way as high as a ship's mast, and sent with terrific force on the attacking vessels many miles from the point where the oil is supplied to the system of submerged pipes. Iron vessels could not pass through this lake of fire, because it could be made to extend many miles along the river. An experiment in connection with the scheme will be made at Fort Mifflin in a few weeks. The necessary apparatus is almost ready at the present moment, and great things are expected from this test.

A CHRISTIAN SCIENTIST.

SHE WAS A CHRISTIAN SCIENTIST, AND YET.

Enter Mrs. Adipose (puffing). "I declare, I believe I get heavier every day. I shall soon be unable to come up those stairs at all. The lecture was lovely, John; I do wish you would take the course. You would soon be rid of those rheumaticky fancies of yours. We count the flesh as nothing. Every sensation is only the reflection of a thought. How cold it is in here! What made you let the fire all get down? Hand me my felt slippers and then tell Jane to bring me some hot tea and toast. I am really quite worn out from combining so much mental and physical effort."—*Judge.*

DOMESTIC DIETETICS.

SPECIALLY PREPARED, FROM PRACTICAL TESTS, FOR THE LADY READERS OF THE "AMERICAN ANALYST."

SEASONABLE FOOD.

December.

MEATS.—Beef, mutton, ham, kidneys, liver, venison, sausage, pork.

GAME AND POULTRY.—Grouse, hare, pigeon, partridge, quail, chicken, duck, turkey, rabbit, goose.

FISH.—Bass, blackfish, bream, clams, cod, crabs, eels, carp, flounder, haddock, halibut, herring, lobster, mackerel, mussels, oysters, perch, pike, porgie, rockfish, salmon, sturgeon, smelt, whitefish.

VEGETABLES.—Artichokes, beets, beans, cabbage, carrots, cauliflower, celery, garlic, lettuce, onions, parsley, parsnips, potatoes, shallots, spinach, squash, tomatoes, turnips.

FRUIT.—Apples, bananas, grapes, oranges, pears.

PRACTICAL RECIPES,

PUREE OF CARROTS.—Clean and rinse four carrots, six turnips, two heads of celery, four leeks, and four onions; put them into a stew-pan, and toss them in butter till they are upon the point of browning; add a teaspoonful of sugar; pour upon them some good soup stock, and simmer slowly. When the vegetables are quite done, pulp them thoroughly; sieve and serve with fried sippets (of bread) soaked in gravy, and placed in the tureen. Be careful that the puree is not too thick.

GROUSE CUTLETS.—Take a brace of young grouse, split them in halves, remove the wing bones, and tuck the legs inside. Season them with pepper and salt, and fry them in a little hot butter till brightly browned on both sides. Dredge a little flour into the butter; add gradually a quarter of a pint of gravy espagnole. Season rather highly with salt and cayenne, simmer for ten minutes, and serve with the gravy thrown over the grouse. Fry till brown.

GRAHAM ROLLS.—As Graham flour should not be sifted, take one and one-half pints Graham flour, two heaping teaspoonfuls Horsford's baking powder; add one teaspoonful salt. To one pint of water add half a gill of molasses, with which wet the flour. A well-beaten egg improves these rolls. Bake like white rolls in Gem pans.

PARSNIPS, BAKED.—Scrape and wash them nicely, and, if large, divide them. Parboil them in water, or milk and water. Take a baking dish, and therein place several pieces of butter, each the size of a walnut. Put the parsnips in the tin, which must be set in the oven. Bake till tender, and serve with melted butter or good beef gravy.

WASHINGTON OMELET.—One cup milk, 6 eggs, tablespoonful butter, salt and pepper, 1 teacupful bread crumbs. Let the milk come to a boil, pour it over the crumbs, and let stand a few minutes. Break open the eggs, and stir till well mixed; add the bread and milk and season. Melt the butter on a hot skillet, pour on the omelet and let it cook slowly; cut in squares, turn, fry a delicate brown, and serve immediately.

BAKED INDIAN PUDDING.—One quart sweet milk, one ounce butter, four well-beaten eggs, one teacupful corn meal, quarter of a pound of sugar, half a cup of molasses. Scald the milk, and stir in meal while boiling; let stand till lukewarm; stir well together. Bake one and a half hours; serve with or without sauce. Half a pound of raisins may be added if desired.

PUDDING SAUCE.—Half a pound of butter, eight tablespoonfuls brown sugar, one tablespoonful of extract of nutmeg, and the white of one egg. The butter must be creamed and the sugar beaten into it, then the egg; the wine poured gently in and stirred till the sauce is cold, then add the extract of nutmeg. Make it in a common sauce tureen, stirring all the while. Do not let it boil.

CHOCOLATE CARAMELS.—Take half a cake Baker's chocolate, two cups granulated sugar, one teacup milk, small lump butter, vanilla. Boil chocolate, milk, sugar and butter together till it is a thick mass; when, by scraping it from the sides of the saucepan, you see it is beginning to granulate, add the vanilla, and pour out on bright tin pans to cool. When cool, cut in squares with a sharp knife.

FRITTERS.—Six eggs, one quart sweet milk, three cups flour, two teaspoonfuls Horsford's baking powder, sifted into the flour while dry, and a little salt. Beat the whites and yolks of the eggs separately. Stir the milk in with the yolks, then add the flour which has previously been mixed with the baking powder; put in the salt, and finally the whites. Beat all together very hard, and fry immediately.

OYSTERS BROILED WITH PORK.—Double a piece of wire into the shape of a hairpin; string it with, first, an oyster, and then a slice of pork; and so on, till it is filled; fasten the ends to a wooden handle, and broil before the fire. Season highly with pepper, and serve the pork with the oysters if it is liked.

TURKEY OR CHICKEN SALAD.—Cut up cold roast turkey or chicken in very small dice; season it with pepper, salt, mustard, and finely minced chives; pour over equal parts of oil and vinegar. Have two or three eggs boiled three minutes. Stir in the yolks with meat; chop the whites very small, and stir in these, so that all is well-mixed. At the time of serving, mix the above with cut-up lettuce or endive.

PURE FOOD.

SOME SENSIBLE SUGGESTIONS REGARDING FEDERAL LEGISLATION.

And now the report comes from Chicago that the adulteration of honey with glucose has become so extensive and injurious to the interests of dealers in the pure product of the bee, that a well-organized movement is on foot to secure Federal legislation, patterned after the oleomagarine law, and imposing a prohibitory tax upon spurious honey. The advocates of action to suppress misrepresentations and fraud in the sale of food products have a laudable object in view, but adopt false methods when they accept the oleomargarine law as their model. The law was based upon mistaken, narrow, selfish and dangerous principles. It was class discriminating legislation of the worst kind, an abuse of the Federal power of taxation in the interest of one set of producers as opposed to their commercial rivals, and constitutes an example of the dangerous blunders possible under our political system, rather than a precedent to be followed under any circumstances or for any purpose, however reasonable in itself. So far as the Federal Government has power to check the abuses and shameful deceptions practiced in food adulterations, it must be done through some broad and comprehensive pure food law, drawn in a spirit of justice and fairness to all, free from the suspicion of discrimination between rival trade interests, and designed to exercise the power of the General Government, as far as it legitimately extends, in behalf of honest business practices, the protection of public health and morals, and the integrity of commercial transactions at home and in our foreign trade. Congress has clearly signified its willingness to adopt such legislation whenever the commercial interests of the country unite on a proposition dealing with the subject fairly and broadly. Discriminating tax laws, however, and attempts to cripple one interest for the benefit of another, and in violation of the fundamental principles of our Government, cannot lead to other results than scandal and failure. The advocates of pure food legislation should avail themselves of the brief intermission between the present and next session of Congress to mature their plans and harmonize their views. The proposition upon which they unite must comply with the general principles to which we have referred. It must be in harmony with the Constitution and with the rules of fair play, and if an effective law is drafted with these limitations, the Federal and State legislatures should be besieged until it is adopted and carried fully into effect. But in this movement such scandalous and indefensible legislation as the anti-oleomargarine law must not be contemplated, and the bills patterned after that model and seeking to extend the same principles to lard, cheese, honey, wine, etc., must be thrown aside as the unworthy production of short-sighted or narrow and selfish interests, and promising only to do evil themselves, and to invite greater dangers in the future.—*Daily Commercial Bulletin.*

REGULATING ONE'S WEIGHT.

PRACTICAL ADVICE FOR FAT AND LEAN PEOPLE.

To increase the weight: Eat, to the extent of satisfying a natural appetite, of fat meats, butter, cream, milk, cocoa, chocolate, bread, potatoes, peas, parsnips, carrots, beets; farinaceous foods, as Indian corn, rice, tapioca, sago, corn starch, pastry, custards, oatmeal, sugar, sweet wines, and ale. Avoid acids. Exercise as little as possible; sleep all you can, and don't worry or fret. To reduce the weight: Eat, to the extent of satisfying a natural appetite, of lean meat, poultry, game, eggs, milk moderately, green vegetables, turnips, succulent fruits, tea or coffee. Drink lime juice, lemonade, and acid drinks. Avoid fat, butter, cream, sugar, pastry, rice, sago, tapioca, corn starch, potatoes, carrots, beets, parsnips, and sweet wines. Exercise freely.—*Kansas City Med. Index.*

MICROBES.

MICROSCOPIC FORMS OF LIFE WHICH SPREAD DISEASE.

It is a wonderful fact that the air we breathe contains foes as deadly and invisible as the malignant spirits with which ancient opinions peopled it. Most epidemics are due to these unseen enemies. To be sure, it is probable that the earth and organic bodies on the earth and not the air, generate them. They are taken up as dust, and being little heavier than air, are long suspended in it. They are known by the general name of microbes—microscopic forms of life. Only a few of the many classes of microbes are harmful, just as only a few of the millions of species of larger vegetable growth are poisonous. In 1883 an epidemic fever, characterized by great depression, inflammation of the bronchial tubes and lungs, and by an incessant cough, swept over the world from east to west. Its advent was sudden, and in most cases the person was well again in less than a fortnight. It was quite fatal, however, to the aged and the weak. This was the famous influenza. The same malady has repeated its ravages—sometimes over extensive tracts of country, sometimes only locally—many times since the Middle Ages. If it is of microbic origin, as is probable, what inconceivable swarms of microbes must have filled the air! Of course no precaution could avail except the habitual maintenance of high health and good hygienic conditions. Malaria is due to microbes which reach their victims either from the air by inhalation or from drinking water which has absorbed them. Boil the water, avoid the night air, sleep in the higher rooms of the house, and guard against all excesses. Typhoid fever is caused by microbes from the discharge of a previous patient which either have found access to drinking water or have been taken up dried into the air. Microbes flourish in all kinds of moist filth. The chief safeguard is general cleanliness, the boiling of all suspected water, and ample ventilation and sunshine. Diphtheria, scarlet fever, whooping cough and measles are due to microbes given off from the skin or breath of the patient. They either float in the air of the room or become attached to the furniture, walls and bedding. Avoid infected rooms and persons. Attendants should keep their stomachs in an active condition with digestible food, but should not overload them. Most microbes are digested and rendered harmless by a vigorous stomach. The surest prophylactics, as preventatives are called, are high health, cleanliness, abundance of air and sunshine, the boiling of water and milk, and avoidance of whatever depresses the physical system—loss of sleep, protracted watching and all excesses, and cheerful courage.—*Youth's Companion.*

MANHOOD AND STRENGTH.

It is hard to conceive a more efficient mechanism than the human body. The best steam-engine utilizes only ten per cent. of the fuel which is consumed in its furnaces; the finest electrical motor wastes eighty per cent. of the energy with which it is supplied; while the mechanism we call the body uses nearly sixty per cent. of the food with which it is provided. In youth, the period which requires food—as much for growing as for exertion—and in old age, when the physical functions no longer do their duty, the superb action of the human system is not so apparent as in manhood, when everything consumed in eating is transformed into thought, feeling and bodily work. Measured by chemical science, the two or three pounds of eatables employed by the average man or woman become the motive power of the mechanisms daily employed in reading, writing, walking, working, and other similar activities. If human beings were perfectly healthy, and lived in strict accord with the principles so rigorously laid down and enforced by Nature, this conversion of food into energy, physical and mental, would go on indefinitely. Such, however, is not the case. Hardly an individual exists but who inherits from his ancestors either disease, or tendencies toward disease. Still worse, it seems impossible for any one to live a regular, healthful life. The necessities of civilized society are so great and onerous that we are compelled to convert night into day, to dwell in unhealthful houses, and to pursue vocations which more or less involve transgressions of natural laws. No matter what may be the cause, the result is the same. Whether it be heredity or mode of life, every human being is liable at times to become sick, and to undergo the misery and loss which all illness involves. This is the real meaning of the thousand and one forms of disease which fill our hospitals and give lucrative employment to armies of physicians. It is a solemn law, and is the scientific expression of the biblical truths, that "The fathers have eaten some grapes and their children's teeth are set on edge," and that "they who sow the wind shall reap the whirlwind." While it is impossible to change our ancestry or to greatly modify our surroundings, yet it is comparatively easy, thanks to modern science, to perceive afar off the approach of sickness and to prevent its ravages to a very large extent. No illness comes suddenly, and no diseased condition is of instantaneous birth. Both are the results of gradual growth. The blood, the true current of life, must change by degrees from purity to impurity, the vital functions must lose their power and activity, and the entire system must fall from its natural high estate before disease can make its appearance. In this series of changes, the first and most important is the deterioration of the blood. All the rest are based and depend upon it. If the blood be kept pure and free from humors, the rest can never happen. And this is easily accomplished. Ayer's Sarsaparilla, the most effective and scientific blood-purifier, enables the individual, no matter

how unhealthy his progenitors or how unsanitary his surroundings, to expel all humors from his blood, and where the impurities of his system have begun to impair the action of his vital functions, to bring the latter into normal tone and activity.

It is in no sense a drug. It does not "physic the system" like so many of the nostrums with which the market is flooded; neither does it stimulate like the multitudinous bitters, nervines, tonics and cure-alls which disgace modern pharmacy. A scientific combination of Honduras sarsaparilla, yellow dock, podophyllin, stillingia and the iodides—all of which are recommended and daily employed by every first-class physician of the civilized world—it does its superb work by expelling the humors of the blood, no matter what their cause, by strengthening the vital functions and by restoring to the organism its natural force and physical efficiency. All persons are liable to disease, and disease of the same origin and nature, but by the simple use of Ayer's Sarsaparilla each can preserve his manhood, strength and health intact, and each can enjoy to the utmost the life with which he is endowed.

Petroleum Complaints.—A German physician has recently issued a report of his observations on the effects of petroleum on the human body. The facts on which his conclusions are based have been gathered during extensive travels in the American petroleum districts. He found that a skin disease was very prevalent among the workmen who were employed at the wells, and on closer examination he concluded that the disease attacked those who were engaged with the heavier and more inflammable oils. Numerous cases were discovered of large quantities of petroleum having been swallowed, with the result of violent affections of the stomach, kidneys and nervous system. In one case where a glassful of petroleum had been drunk, the greatest difficulty was experienced in preventing the patient from falling asleep, an eventuality which is especially fatal in such instances. Symptoms of poisoning could also be traced after a lengthened period of inhalation of the vapor, but the symptons were only noticeable when the subject was in a bad state of health.

A Natural Threat.—A Pittsburgh natural gas expert has made the calculation that each day 600,000,000 cubic feet of natural gas are drawn from the earth for use in that city. This amount weighs over 12,000,000 pounds, of which 8,000,000 pounds are carbon. He is of the opinion that, with the withdrawal of so much material, something will give way. Already since the development of natural gas in western Pennsylvania, there have been several "shakes."

Dr. Alexander Zoroastroff, of Belostok, emphatically recommends to military men, sportsmen, &c., a grease for boots which is said to completely prevent sore feet, and so protect predestrians from the whole train of familiar affections caused by that minor accident. The ointment is made of four parts of lard, four parts of olive oil and one part of caoutchouc (raw rubber), which are melted together on a slow fire. Having moistened the sole of the boot with water, the inventor warms the boot in a stove or before a fire, and then smears it over with the compound. The boot is said to become soft, pliable, shining, water-proof, and even more durable.

Coal Products.—A ton of coal yields about 8,000 cubic feet of gas and 1,500 pounds of coke. The purification of gas furnishes forty-five gallons of ammonia water, from which is obtained sulphate of ammonia for agricultural purposes, and about 130 pounds of tar. It is here that the operation becomes especially interesting, for from this last-named product are obtained seventy pounds of pitch, eighteen pounds of creosote, nine of naphtha, thirteen of heavy oils, six of naphthaline, four of naphthol, two of alizarine, about one each of phenol, aurine and aniline, (the substance to which we are indebted for so wonderful colors), ten ounces of toluidine, six of anthracine and twelve of toluene.

Effect of Civilization.—Consumption among Indians, according to statistical evidence, increases under the influence of civilization, *i. e.*, under the compulsory endeavor to accustom themselves to the food and habits of an alien race. Dr. Matthews thinks that climate has very little to do with this increase, since the Indian race invariably suffers more than either the white or colored race. He is inclined to regard the disease as scrofulous in origin and arising from improper and badly cooked food, bad dwellings and poor clothing.

Euphorbia Rubber.—The gum known as euphorbia rubber, though for some time past occasionally appearing in the market, and which has seemed likely to baffle the skill of manufacturers in making satisfactory use of it, is now being employed advantageously in certain combinations; that is, a method has been discovered which renders the gum available for mixing with various kinds of India rubber, say to the extent of about 50 per cent. Thus, a piece of vulcanized rubber containing 50 per cent. of the euphorbia gum has been tested for some time in an exposed position on a roof, and it was found to have kept in better condition than a similarly exposed piece of ordinary pure vulcanized rubber, and mixed with gutta-percha, it prevents the latter from becoming brittle. Washers made with 30 per cent. of this substance and vulcanized rubber are found to stand well and to satisfactorily retain their elasticity.

Electricity in Mining.—An application of electricity to iron mining is now proposed. It consists in the crushing of magnetic iron ore by crusher and rolls, and effecting a separation of the ore from the gangue by means of dynamos. An experimental plant is to be erected at one of the Marquette mines, and the machinery best adapted for work on a large scale tested. With the large waste rock piles of magnetite on that range, a due regard to economies and fair prices for ore, it is thought that there should be developed a paying business of handsome proportions.

BUSINESS NOTES.

HORSFORD'S ACID PHOSPHATE.

Dr. F. G. McGavock, McGavock, Ark., says: "It gives me pleasure to bear testimony to its beneficial action in obstinate indigestion."

TAKE ONE.

Take one—a box of Esterbrook's popular steel pens when at the stationers. The price will be found very reasonable.

LOOK OUT for Imitations and Substitutes

OF

Horsford's

ACID PHOSPHATE.

A variety of imitations and substitutes of this standard preparation have appeared under the name "Acid Phosphate," or a similar title, all of which differ materially from the genuine article.

Be sure the name **"HORSFORD'S"** is on the label. No other genuine.

N. D. ARNOLD, Treas.

Providence, R. I. Rumford Chemical Works.



A Practical Christmas Present

The number of bright women who no longer doubt that PEARLINE saves time, labor, wear and tear in all washing and cleaning, and is withal perfectly harmless, reaches millions—and increases daily—a fact proven by the consumption of the article, which is equal to two packages a year for every family in the land.

Every pound package of Pearline which you give away will enable a poor woman to do in half a day, washing or cleaning that would consume a whole day if done in the ordinary way, with soap; besides, the work will be well and easily done, and the things washed (as well as the woman herself) will not be rubbed to pieces.

We think most women would appreciate such a present. To prove all this, get a package of PEARLINE from your grocer, and wash or clean something by the labor-saving directions which are on every package.

Beware of imitations. 124 JAMES PYLE, New York.

ESTABLISHED 1823.

ALEX. YOUNG CO., Limited,

DISTILLERS OF

Y. P. M. WHISKIES.

DISTILLERY, - - - Nos. 408, 410, 412 and 414 South Street.
MALT HOUSE, - Nos. 416, 418, 420, 422 and 424 South Street.
STORE, - - - - - - - - - - No. 700 Passyunk Avenue.

PHILADELPHIA, PA.

New York Office, – 78 Wall Street.

FOR SALE BY

PARK & TILFORD, and ACKER, MERRALL & CONDIT.

NATRONA BI-CARBONATE OF SODA.

(ABSOLUTELY PURE.)



The nature of the raw material from which NATRONA BI-CARBONATE OF SODA is made—viz., kryolith, a mineral containing *pure sodium*—insures a purity and uniformity of product which cannot be obtained from any other known material. In making BI-CARB. SODA from any other raw material, the use of sulphuric acid is a necessity, but none is used in any part of the process of making NATRONA BI-CARB.; hence its entire freedom from the slightest trace of arsenic, which is always present in ordinary soda. Its absolute purity and entire freedom from all traces of *sulphate of soda*, common salt and other impurities, render NATRONA BI-CARB. NEARLY TASTELESS, and being bolted through the finest bolting-cloth, insures the finest stage of division.

To these indisputable facts the attention of CONSUMERS of soda is specially called. They are IMPORTANT, and should influence both those who use and those who sell soda, to buy and sell NONE BUT THE BEST.

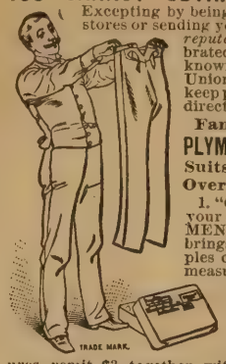
The NATRONA BI-CARB. Soda is kept in stock by almost every wholesale druggist and grocer throughout the United States, of whom it may be ordered.

Natrona Bi-Carb. Soda is unequaled by any other brand of English or American Manufacture.

PENNA. SALT MANUFACTURING CO.,

NATRONA CHEMICAL WORKS. PHILADELPHIA, PA.

YOU CANNOT OBTAIN THESE GOODS



Excepting by being measured at one of our stores or sending your order by mail. The *reputation* of these justly celebrated goods is now so widely known in every State in the Union that we have only to keep plainly in the public view, directions how to obtain the

Famous Custom-Made
PLYMOUTH ROCK $3 PANTS
Suits cut to order, $13.25.
Overcoats, to order, $12.

1. "Only a postal card" with your address, **provided you** MENTION THIS PAPER, brings by return mail 20 samples cloth to select from, self-measurement blanks and a linen tape measure. 2. But *if you have not time* to wait for samples, tell us about the color preferred, with **waist, inside leg** and **hip** measures, remit $3, together with 35 cts. to cover cost of expressage or postage, and we will forward the goods prepaid to any address in the U. S., guaranteeing safe delivery and entire satisfaction or money refunded. **Remember** that for any cause we refund money at buyer's request upon return of goods, or make alterations on new garments *free of extra charge.*

ONLY A POSTAL CARD

PLYMOUTH ROCK PANTS CO.,
Address all mail to ☞ **18 Summer St., Boston, Mass.**

BRANCH OFFICES:
285 Broadway, New York; Burnside Building, Worcester, Mass.; Gilmore House, Springfield, Mass.; 60 Market St., Lynn, Mass.; Butler's Exchange, Providence, R. I.

A letter from the American Express Co. (capital $20,000,000) about our standing and business methods may be obtained by writing to them at Boston.

LEA & PERRINS' SAUCE.

Lea & Perrins', the original and genuine Worcestershire Sauce, has been before the public over a half a century. Like all popular favorites it has long been the standard of comparison and the pattern for counterfeiters who not being able to imitate its excellence offer to the public imitations in bottling, labels and style of putting up. They dare not counterfeit the signature of Lea & Perrins which is on the red label of every genuine bottle, and of which this is a facsimile.

Lea & Perrins

To be sure of obtaining the genuine article, see that the above signature is on the label.

YELLOWSTONE NATIONAL PARK, PACIFIC COAST AND ALASKA.

The Yellowstone Park is unquestionably attracting more attention at the present time, as a tourist resort, than any other place on the face of the earth. This spot is reached by rail only by the Northern Pacific Railroad, the famous dining-car line to the Pacific Coast, the only one of the transcontinental lines running dining cars of any description whatever. A book ticket will be sold at the Eastern terminals of the Northern Pacific or $110, including rail and stage transportation, meals on dining cars, Pullman and five day's accommodations south of Livingston in the Park.

The Alaska tour is also one that is attracting wide attention. The rates and facilities offered for making this trip are better, via the Northern Pacific Railroad, than by any other line. The attractions offered *en route* via the Northern Pacific, such as the ride through the Lake Park region of Minnesota, by the great wheat fields of Dakota, along the Yellowstone River and Clark's Fork of the Columbia, through the famous Spokane Falls region, over the Cascade Range, by the Palisades of the Columbia, Puget Sound, etc., together with the superior accommodations offered, make a trip by this route especially enjoyable. By writing Charles S. Fee, General Passenger Agent, M. P. R. R., St. Paul, Minn., you will receive copy of "Wonderland" and other books descriptive of the Yellowstone Park, Alaska and the country in general traversed by the "Dining Car and Yellowstone Park route."

UNEQUALLED Ask your Grocer for, and insist on having, **LEA & PERRINS'** Sauce, "The Worcestershire." It is known throughout the whole civilized world as the Best and most Delicious Sauce. **DELICIOUS**

SCOTCH MARMALADE, Jams, Fruit and Wine, Jellies, &c.
By James Keiller & Son, Dundee.

SCOTCH BISCUITS, Albert, Water, and Oat Cake,
By Robert Middlemass & Son, Edinburgh.

RACAHOUT des Arabes, by De Langrenier, Paris.

BAY WATER, West India, (J. D. S. brand), in cases, one dozen bottles.
Sold by all first-class Grocers.

JOHN DUNCANS' SONS, 43 Park Place, New York. Agents for the United States.

Robert Gordon's

TRADE MARK.

SPICED · SEA · FOODS

(IN GLASS.)

OYSTERS, LITTLE NECK CLAMS, MUSSELL, SHRIMP, LOBSTER, Etc.,

Packed in 8 and 16 oz. Jars. Guaranteed to be strictly Pure.

MADE OF THE FINEST MATERIALS.

—ALSO,—

ROBERT GORDON'S CONDENSED CLAM CHOWDER,

In 3-lb Cans. Cheapest and Best in the Market.

MANUFACTURED BY

JONES, GORDON COMPANY, Limited,

204 West Street, New York.

ESTABLISHED 1857.

J. H. CUTTER,

OLD

BOURBON AND RYE WHISKIES.

We are the Sole Owners and Proprietors of this Celebrated Brand of Whiskey.

C.P.MOORMAN & CO. **LOUISVILLE, KY.**

We Guarantee the Superior Quality and Absolute Purity of every Barrel of Whiskey sold by us under this Brand.

STEWART CERAMIC CO.,

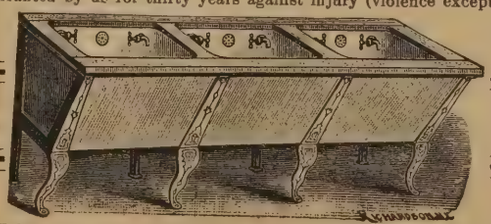
312 PEARL ST., Cor. Peck Slip, NEW YORK.

Sole Manufacturers under Morahan's Patents of

SOLID WHITE CROCKERY STATIONARY WASH TUBS

Warranted by us for thirty years against injury (violence excepted).

CANNOT LEAK.



VERY STRONG.

This cut shows three Tubs set up with galvanized iron stands and heavy ash frame firmly secured on top.

SMOOTH GLAZED SURFACES. ALWAYS CLEAN.

The only solid white crockery Washtub ever made in the world. Do not buy imitations until you see the genuine "Morahan's Patent," stamped on every tub. Washboard and Soapcup moulded in every set.

SOLID WHITE CROCKERY SINKS

Made of same material as the Tubs and fully as strong.

Send for Illustrations and Price Lists. **Send for Illustrations and Price Lists.**

COLDEN'S LIQUID BEEF TONIC.

ORIGINAL LABEL: "Colden's Liebig's Liquid Extract of Beef and Tonic Invigorator."

AN INVALUABLE AID IN THE TREATMENT OF ALL CASES OF DEBILITY.

Established 15 Years. Endorsed by Scores of Physicians.
Essentially Different from all other Beef Tonics.
Beware of Imitations.

COLDEN'S LIQUID BEEF TONIC consists of the Extract of Beef (by Baron Liebig's process), spirit rendered non-injurious to the most delicate stomach by extraction of Fusel Oil, soluble Citrate of Iron, Cinchona, Gentian and simple aromatics. An official analysis of this preparation by the eminent Chemist ARTHUR HILL HASSALL, M. D., F. R. S., and an endorsement by SIR ERASMUS WILSON, F. R. S., is printed on the label of each bottle.

Its Range of Action Embraces all Cases of Debility.

By the urgent request of several eminent members of the Medical profession, I have added to each wineglassful of this preparation two grains of SOLUBLE CITRATE OF IRON, and which is designated on the label as "No. 1," while the same preparation, without Iron, is designated on the label as "No 2."

It acts directly on the sentient gastric nerves, stimulating the follicles to secretion and gives to weakened individuals that first pre-requisite to an improvement, an appetite.

I will, upon application, send a sample bottle of Colden's Liquid Beef Tonic to any physician in regular standing. Please ask your Dispensing Druggist (if he has not already applied) to order it. In prescribing this preparation physicians would be particular to mention "COLDEN'S" viz: "EXT. CARNIS. FL. COMP. (COLDEN). It is put up in pint bottles and can be had of Wholesale and Retail Druggists generally throughout the United States.

C. N. CRITTENTON, Sole Agent,
115 Fulton Street, N. Y.

Please Mention the AMERICAN ANALYST.

:::JUST PUBLISHED:::

MANUAL OF DIETETICS

—FOR—

Physicians, Mothers and Nurses.

BY

W. B. PRICHARD, M. D.,

New York.

THIS USEFUL MANUAL CONTAINS VALUABLE INFORMATION FOR LADIES; SUCH AS, MATERNAL OBLIGATIONS, CLEANLINESS, CLOTHING, WET NURSING, WEANING AND ARTIFICIAL FEEDING OF INFANTS ALSO, A COMPLETE DIET FOR THE SICK IN EVERY DISEASE, INCLUDING THE FOLLOWING: PLEURISY, BRONCHITIS, ASTHMA, CONSUMPTION, BRIGHT'S DISEASE OF THE KIDNEYS, CALCULUS OR STONE, CYSTITIS, DIABETES, TYPHOID FEVER, DIPHTHERIA, SCARLET FEVER, MEASELS, ETC., ETC.

Handsomely Bound in Cloth, Fifty Cents,
SENT FREE ON RECEIPT OF PRICE.

ADDRESS,

THE DIETETIC PUBLISHING CO.
115 FULTON STREET,
NEW YORK.

J. HENRY HENTZ. J. P. ROBINETT. J. HENRY HENTZ, Jr.

ESTABLISHED 1793.

WHITE, HENTZ & CO.,

SOLE PROPRIETORS OF

Trimble and Pennsylvania Monogram Whiskies.

222 and 224 NORTH SECOND ST., PHILADELPHIA.

D. LIEBER, 17 South William St., New York. Col. H. A. SELIGSON, 1200 Pennsylvania Ave., Washington, D. C.

PEACOCK'S BROMIDES

(SYR: BROM: COMP: PEACOCK)

NERVE SEDATIVE.

Each fluid drachm represents 15 grains of the Combined C. P. Bromides of Potassium, Sodium, Calcium, Ammonium and Lithium.

USES:—EPILEPSY, and all CONGESTIVE, CONVULSIVE, and REFLEX NEUROSES.

This preparation has stood the test of time and experience, and can be relied upon to produce results, which can not be obtained from the use of commercial bromide substitutes.

DOSE:—One to two FLUID drachms, in WATER, three or more times a day.

PEACOCK CHEMICAL CO., St. Louis.



GOLD MEDAL, PARIS, 18[illegible]

BAKER'S

Breakfast Cocoa.

Warranted *absolutely pure Cocoa*, from which the excess of Oil has been removed. It has *three times the strength* of Cocoa mixed with Starch, Arrowroot or Sugar, and is therefore far more economical, *costing less than one cent a cup*. It is delicious, nourishing, strengthening, easily digested, and admirably adapted for invalids as well as for persons in health.

Sold by Grocers everywhere.

W. BAKER & CO., Dorchester, Mass.

CALIFORNIA

Fine Table Wines

From our Celebrated Orleans Vineyard.

Kreud Sarnsthy & Co

Producers of the

ECLIPSE

CHAMPAGNE,

530 Washington St.

SAN FRANCISCO.

PARK & TILFORD, New York, } Agents.
C. JEVNE & CO., - - Chicago, }

THE TORSION

Braided Wire Mattress.

At all times a thoroughly ventilated and perfectly clean mattress, it cannot absorb odors, or retain exhalations or disease germs.

D. HAYES AGNEW, M. D., Prof. of Surgery, University of Pennsylvania, says:

"The Torsion Braided Wire Pillow and Mattress I regard as superior to anything of the kind now in use; well suited for either private or hospital use.

Prof. WM. H. PANCOAST, late Professor of Anatomy, etc., in Jefferson Medical College, now Professor of Anatomy and Clinical Surgery in the Medico-Chirurgical College of Philadelphia Hospital Surgeons, says:

"I have used in my surgical practice your Braided Wire, in the form of mattresses, pillows for the head and body, and short pillows for the arm and leg when injured. I find them most admirable, cool and light, yet affording perfect and elastic support.

I have saved a patient from bed sores by the use of the Braided Wire mattress."

WM. H. FORD, President Board of Health, Philadelphia, says:

"I have used the Torsion Braided Wire Mattress with great satisfaction, it is light and therefore easily handled; it is elastic and very comfortable. The case can be easily removed to afford a complete airing, a feature of great importance from a health point of view.

It is an invention of great usefulness.

For descriptive circular and price list, send to

The Torsion Braided Wire Upholstering Company,

1017 CHESTNUT ST., PHILA.

ALTHENE SKIN SOAP

An absolutely pure and perfect soap for all purposes of the toilet, nursery, bath or sick-room. Has the approval of leading chemists and physicians, and is recommended by all who have used it. Price 25 cts. a cake, or 65 cts. for a box of three. Can be obtained of the retail druggists or from

J. W. CAMPION & CO., 916 Filbert Street,

PHILADELPHIA.

Sura Cura

ROBINSON'S SURE CURE FOR

RHEUMATISM

And NEURALGIA,

And remedy for diseases arising from an impure state of the blood. An antidote for MALARIA. Price 50 c. and $1. Sent by mail on receipt of price. Send for Circular.

R. W. ROBINSON & SON,
184 Greenwich Street,
NEW YORK.

Sura Cura

HORTON, CATO & CO.'S



"ROYAL" SALAD DRESSING.

The best prepared Dressing, always fresh, does not turn oily, rancid or decompose as other dressings of a similar nature.

"ROYAL" WORCESTERSHIRE SAUCE,

The Peer of American Product.

HORTON, CATO & CO.,

SOLE PROPRIETORS AND MANUFACTURERS,

DETROIT, MICH.

KEITH'S

CON. TINC. AVENA SATIVA

(From Common Oats.)

Without Admixture of any Kind.

A Powerful Nerve Stimulant, Tonic, Etc.

Was first offered to the medical profession by B. Keith & Co., in 1881, as a remedy to be employed in the treatment of

Paralysis, Epilepsy, St. Vitus' Dance, the Morphia or Opium Habit, Chloral and Tobacco Habits, Sleeplessness, Nervous Debility and Exhaustion, Neuralgia, Alcoholism Painful and Deficient Menstruation, Headache, Hysteria, Impotency, Convulsions and Prostration from fainting, and in the Convalescent stage of all Acute Diseases.

Dose.—From ten to thirty drops, or more, as often as may be indicated to meet the urgency of the case. Administer in hot water when quick action is desired.

An Overdose Causes Pain at Base of Brain.

——WE MAKE ONE QUALITY ONLY.——

Price,

2 oz., 45c.; 4 oz., 75c.; 8 oz., $1.35; 16 oz., $2.50

B. KEITH & CO.,

75 William Street, N. Y.

THE

VIBURNUM COMPOUND

OF

DR. HAYDEN,

THE STANDARD IN

FEMALE DISORDERS.

Employed in the leading Hospitals, and prescribed daily by the most eminent Gynæcologists. ***Five Thousand Physicians*** have given their testimonials for ***HAYDEN'S VIBURNUM COMPOUND.***

DISPENSED BY ALL APOTHECARIES.

RIDGE'S FOOD

is the most reliable substitute known for mother's milk. Its superiority rests on the test of 30 years use in Great Britain and the U. S. A sustaining, strengthening diet for Invalids; nutritious, easily digested, and acceptable to the most delicate stomach. Four sizes, 35c. up. Pamphlet, "Healthful Hints," sent free. WOOLRICH & CO., Palmer, Mass.

OPIUM AND LIQUOR HABIT CURED.

WE solicit an investigation of our system and methods, and will gladly send to any one very interesting matter on the OPIUM HABIT DRUNKENNESS and their effects and cure Physicians specially invited to examine, and if desirous of trying our remedies, liberal arrangements will be made with them

THE LESLIE E. KEELEY CO., Dwight, Illinois.

Any Retail Druggist in the United States who desires to obtain Advertising Matter, Show Cards, Signs, etc., which will assist and instruct him in the sale of Harriet Hubbard Ayer's Recamier Toilet Preparations and Vita Nuova, should address The Recamier Mfg. Co., 52 and 54 Park Place, New York City.

ESTABLISHED 1872.

GELATINE.

JAMES CHALMER'S SON'S

Transparent Gelatine.

PURITY—STRENGTH.

Best for Family Use.
Jellies, Blanc Mange, Etc.

ACKNOWLEDGED BY EVERY ONE EQUAL TO THE BEST.

"BILLET"

are

Carefully Selected

French Sardines,

Packed in Choicest Olive Oil.

AT ALL LEADING GROCERS

THE FINEST MADE
COLBURN'S
PHILADELPHIA
MUSTARD
KING OF CONDIMENTS

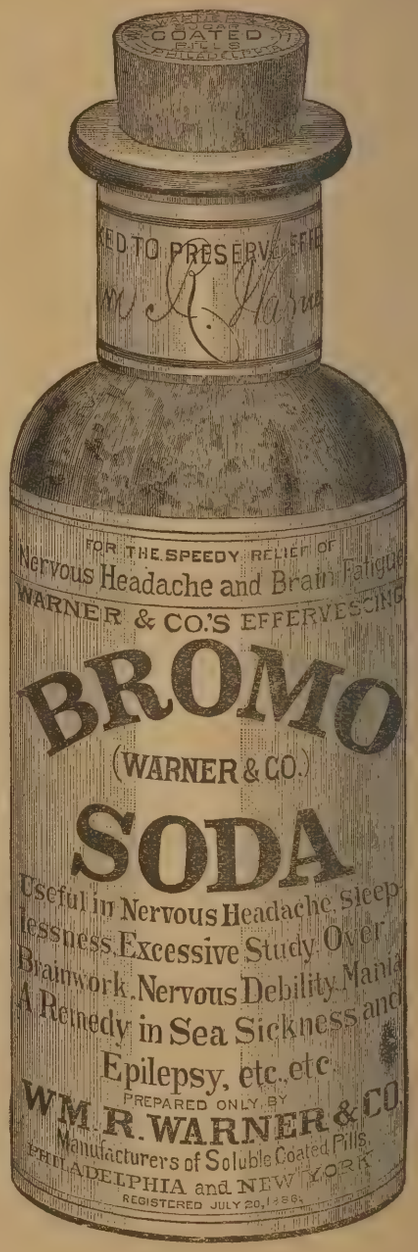
THURSTON'S
IVORY PEARL TOOTH POWDER
WILL KEEP THE TEETH IN PERFECT CONDITION AND THE GUMS HEALTHY.
Price 25 & 50 Cents PER BOTTLE.

A CURE

FOR

Sick and Nervous

HEADACHES.



ASK FOR

BROMO-SODA

AND

TAKE NO SUBSTITUTE.



ANALYZE "MONON" Resolutions!?

Whereas, The Monon Route wishes to make known to the world that it has the finest system of Pullman Buffet Sleepers and Chair Cars, running between Chicago and Louisville, or Chicago, Indianapolis and Cincinnati;

And Whereas, This makes it in fact the double connecting link of Pullman travel between the winter cities of Florida and the northern summer cities; then

BE IT RESOLVED, That, before starting on a trip, be sure and address E. O. McCormick, Gen'l Pass. Agent, 185 Dearborn Street., Chicago, for rates, etc.

FACIAL BLEMISHES.



The Largest Establishment in the World for their Treatment. Facial Development, Hair and Scalp, Superfluous Hair, Birth Marks, Moles, Warts, Moth, Freckles, Wrinkles, Red Nose, Acne, Pimples, Black Heads, Scars, Pitting, etc., and their treatment. Send 10 cts. for book of 128 pages, treating on 25 skin imperfections, 6th edition revised and illustrated.

Dr. JOHN H. WOODBURY,
210 West 42d St., New York City, N.Y.
Inventor of Facial Appliances, Springs, etc.
Six Parlors; three for Ladies. Established 1870.



These Goods are "Par Excellence,"
Pure, Healthful and Reliable, warranted to give satisfaction in every particular.
For sale by wholesale and retail grocers throughout the United States. VOUWIE BROS., Manufacturers CLEVELAND and CHICAGO.

ESTERBROOK'S STEEL PENS

Leading Numbers 14,048,128 130, 135, 333, 161.



—For sale by all stationers.—
THE ESTERBROOK STEEL PEN CO., 26 John St., N. Y.
WORKS: CAMDEN, N. J.

Ask Grocers for our Patent Barley **CRYSTALS**, a new, **unrivalled Cereal Food**, for Breakfast Tea & Dessert. If not sold there, write us for free samples. **GLUTEN FLOUR** and **SPECIAL DIABETIC FOOD** are invaluable waste-repairing flours for **Dyspepsia, Diabetes, Debility & Children's Food.** No bran; mainly free from starch. For all family uses nothing equals our **HEALTH FLOUR.** Send for circular offering 4 lbs. free.
FARWELL & RHINES, Props., Watertown, N.Y.

A BUSINESS BENEFIT.

ADVANTAGES TO ADVERTISERS OFFERED BY THE AMERICAN ANALYST.

It has not the limitations of a daily paper. No one reads yesterday's paper. A monthly lives at least a month, while a semi-monthly is fresh twice a month, and its audience is not limited by geographical lines, but the circulation is all over the United States and Canada.

It contains matters of interest to everyone, especially the ladies of the household, and is, therefore, sure of a careful perusal. Our audiences are intelligent and of the better classes, who have money to spend, and any well worded advertisement in our columns, giving real information, will receive a careful perusal.

Our rates are as low as our circulation affords. Large circulation and original matter cost money, and those advertisers who desire to realize these benefits must expect to pay reasonably for them.

Advertisements in our columns are permanent. Most of our subscribers bind their numbers.

Our advertisements are set up in an attractive form, sure to call the attention of the reader.

Anything that our readers want, or for which a demand is to be created, not wholly of a local nature, will pay to advertise with us.

We take only advertisements from legitimate houses of really meritorious goods, and give them all the editorial assistance they deserve; consequently our readers knowing this, have confidence in advertisements contained in our columns.

The fact that we have the best and largest houses in every branch of trade advertising with us, and that they always renew as their seasons arrive, proves beyond a doubt that they have found the AMERICAN ANALYST a good advertising medium. Why should not you?

SWIFT'S

Choice Chicago Dressed Beef

—AND—

MUTTON.

CAN be found at all times in full supply and at popular prices at the branch houses in all the larger cities and is ***retailed by all first class butchers.***

The trade of all marketmen and meat dealers is solicited for our Wholesale Branch Houses, and the ***public may rest assured*** *that in* ***purchasing our meat*** *from dealers they will* ***always receive the best.***

SWIFT AND COMPANY,
UNION STOCK YARDS,
CHICAGO, ILLS.

Tabasco Pepper Sauce

OR LIQUID PEPPER.

Is simply the Pulp of the Ripe Pepper Extracted by Pressure.

The seed of this Pepper was obtained from Central America, and by careful cultivation in Louisiana for many years has been so improved in strength, flavor and aroma, as to have become a new variety of Red Pepper, superior to all others. The pulp is so handled as to retain all the flavor, strength, aroma and color of the ripe fruit, and to keep unimpaired in any climate. It excites the appetite, promotes digestion, and is pronounced, by connoisseurs, to be the finest condiment in the world. For medicinal purposes it recommends itself by its purity, strength and diffusible form.

Manufactured by E. McILHENNY,
NEW IBERIA, LA.

For Sale by all Wholesale Grocers.

ON THE USE OF PURGATIVES.

BY CHARLES A. HOFF, M. D., ST. LOUIS, MO.

Of all preparations contained within the *pharnacopœia,* there are none, apparently, held in higher esteem by mankind than that class of medicines, commonly known as purgatives. The busy practitioner confidently prescribes them with variable frequency, singly and combined, from the date of the writing of his very first prescription to that of his last; and the corner druggist rarely sees a day pass over his head on which he does not greet the customer who has called around to get "something to act upon his bowels." Indeed, the inevitable purgative awaits the tiny baby screaming in its first attack of colic; it is resorted to by the invalid weighted down with years of suffering and disease; and it is by no means despised by the individual in robust health, when assailed by the various petty ills, which even the most vigorous seldom entirely escape.

Notwithstanding the fact that purgatives are so generally prescribed by the physician, and so frequently resorted to without advice by the patient, they are not altogether incapable of doing harm. As everybody knows, the habit of purging the system repeatedly with salines, cholagogues, hydragogues, or drastics, is a most pernicious one; and the physician who fails to exercise a proper care, both in the selection and the administration of cathartics will sooner or later bankrupt the health of his patients as well as his own hard earned reputation.

Constipation is a complication of so many disorders, a symptom of so many diseases that its treatment in different cases depends upon very different considerations. For a simple, ordinary attack, the average doctor has been accustomed to use a simple purge, such as castor oil, sulphate of magnesia, rhubarb, senna, aloes, colocynth, blue pills, etc.; yet in none of these, can it be truly said, has there been found all that could be wished for, even in so simple a matter as a laxative. Where can we find the physician who has not been vexed and annoyed at the complaints of his patients against the purgative medicines he has been accustomed to prescribe. Some people there are who can not or will not swallow pills; many object to the nauseating castor oil; not a few oppose the use of salines since they are disagreeable both in taste and effect; many look upon all resinous cathartics as objectionable on account of their so called heating properties; aloes is objected to in pills and especially in pregnancy; elaterium is said to be excessively harsh and severe, croton oil is known to be dangerous; podophyllin causes an undue amount of griping; blue mass is avoided on general principles; and so on to the end of the chapter.

Fortunately, however, the physician of the present need no longer be placed in a dilemma when called upon to prescribe a preparation free from the faults enumerated in connection with ordinary purgatives. The pharmacist has bravely come to his aid with a formula of incomparable excellence; and this preparation, a combination of "manna, purified cathartic acid and fruit juice," although but recently brought to the notice of the medical world, is, nevertheless, already regarded as a most valuable addition to the resources of medicine.

The happy thought that suggested the combination known as the Rio Chemical Co.'s Acid Mannate justly challenges unlimited admiration and esteem, and has thus far evoked from the profession an almost universal verdict of commendation and praise. Prompt, mild and certain in its action, Acid Mannate may well be considered an ideal remedy in the constipation of pregnancy. Being pleasant to the taste, and continuing its good work without increased dosage, it is pre-eminently adapted to cases of habitual constipation. Indeed, in its wide range of adaptability as an aperient medicine it is impossible to exaggerate its importance, or allude either directly or indirectly to the vast variety of its beneficial, therapeutical properties.

The importance of laxatives is probably nowhere appreciated so much as in the constipation of pregnancy; and it is to this fact, no doubt, more than to any other, that Acid Mannate owes its great popularity and fame among remedial agents. The testimony of thousands of honorable medical gentlemen leading us to believe that, through the beneficent effect of this same elegant formula, constipation need not hereafter, as in the past, be regarded as one of the most troublesome attendants upon gestation. Moreover, the atrocious female pill of unknown composition but of dire effect, which has deluged the drug market for ages, we may consider as having had its day; and it is to be hoped that, since the physician is now in possession of a purgative especially suited to the period of gestation, female life will be less frequently harassed by the ails and aches said to be peculiar to the sex; and that miscarriages, displacements, granular erosions, congestions, headaches, dyspeptic and hypochondriacal attacks, and the whole long train of aches, pains and nervous ills will grow less familiar to the medical profession in the same ratio that the physician increases his familiarity with the actions of Acid Mannate.

A full sized bottle of Acid Mannate will be sent free to any Physician who desires to test it, if he will pay the express charges and mention this Journal, on application to the

RIO CHEMICAL CO.,
St. Louis, Mo.

A NEW USE
FOR
LIQUID PEPTONOIDS.

Successfully used in Dissolving the False Membrane in Diphtheria.

A Physician writes: "*In an experience of over thirty years I have never used anything to equal your LIQUID PEPTONOIDS as a local application with a spray. It will dissolve the membrane and destroy the diphtheretic odor in less than twenty-four hours. I use the LIQUID PEPTONOIDS full strength, as a spray, two or three times a day, in bad cases.*"

Used successfully by another physician in two desperate cases:—"*I was induced to try LIQUID PEPTONOIDS in two very desperate cases of DIPHTHERIA. I think I never saw throats more heavily coated with exudate than were these, and I think I never saw it more rapidly disappear than in these cases, by frequent spraying with your LIQUID PEPTONOIDS.*"

LIQUID PEPTONOIDS can be taken by patients unable to ingest food in any other form. In *dyspepsia* and *loss of appetite* its effects are positive, its digestive properties assisting in the digestion of food taken and its peptogenic properties quickly stimulating the natural digestive secretions of the stomach.

PANCROBILIN.

Prepared (in both Liquid and Pill form) from Extract of Pancreas and Bile.

This preparation is designed expressly to increase the digestion and absorption of fats.

We believe that the fat-digesting properties of pancreatine and bile are inseparable, and that without their union in the intestinal tract but little, if any, fat would be digested and absorbed.

PANCROBILIN will be found of great service in *Phthisis and other wasting diseases, Nervous Prostration, Constipation, Inanition, Malnutrition, Intestinal Indigestion* and wherever there is a failure to assimilate fats.

If the skin is first wet with LIQUID PANCROBILIN, the inunction of oils will be greatly facilitated.

LIQUID PANCROBILIN is put up in pound bottles. PILL PANCROBILIN is put up in bottles holding 100 pills. The coating of the pills will resist acid digestion, when given as directed, but will be quickly dissolved in the alkaline secretions of the duodenum.

PHOSPHO-CAFFEIN COMP.

(*Granular Effervescing.*)

Formula for each dessertspoonful:—

Caffein.
Acidi Phosphorici āā, grains, ss.
Antipyrin.
Ext. Apii. Grav. dulc. (*Celery*), āā grains, j.
Sodium Bromide, grains, v.

The satisfactory results produced by PHOSPHO-CAFFEIN COMP. in *Headaches, Neuralgia, Insomnia, Neurasthenia and general Nervous Irritability*, are not due to the effect of any one ingredient, but the happy effect of the combination. A thorough series of comparative tests have demonstrated the superiority of the above formula over any other in the market.

REED & CARNRICK, New York.

GORDON & DILWORTH

MANUFACTURING PURVEYORS

Established 1847

ALIMENTARY PRODUCTS

ALL OF OUR PRODUCTIONS BEAR THIS TRADE MARK

WE WILL PROSECUTE ALL INFRINGEMENTS & IMITATIONS







CHOICE DESSERTS

OVER 100 DOMESTIC & FOREIGN FRUITS AND VEGETABLES TRANSMUTED INTO TABLE DELICACIES

PRICES ON PRESERVED FRUITS REDUCED 1ST DEC. 1885

PRESERVED, CANNED & BRANDY FRUITS, FRUIT JELLIES, VEGETABLES, TOMATO CATSUP, SYRUPS & JAMS, SALAD DRESSING, BLACKBERRY BRANDY, MINCE MEAT, PLUM PUDDING, SWEET PICKLES, OLIVES & CAPERS, WINE JELLIES, MARMALADE, SOUPS, SAUCES &c.

SOLD BY THE LEADING GROCERS ON THE AMERICAN CONTINENT.

BOVININE, BUSH'S FLUID FOOD.

Is the ORIGINAL and ONLY preparation of RAW FOOD that does not become putrid and disgusting in a short time.

A MOST WONDERFUL NUTRIENT.

The vital principles of Beef and Mutton concentrated. A highly condensed Raw Food Extract. Acceptable to the most delicate taste and smell. Retained by delicate stomachs that reject all other foods. It assimilates more readily than any other food known to the medical profession. Bovinine under the microscope shows the blood corpuscles in their normal condition strongly marked, while in other foods or extracts this vitally important element is destroyed by the action of heat in cooking.

Containing 26.58 Per Cent. of Soluble Albuminoids,

According to OSCAR OLDBERG, Ph.D., Professor of Chemistry and Toxicology, and Dean of the North-Western College of Pharmacy.

A. L. LOOMIS, M. D., Professor in Medical Department of University of New York, says: "I prescribe Bush's Fluid Food or BOVININE, and prefer it to similar preparations."

J. S. JEWELL, M. D., Chicago, says of Bovinine: "I am delighted with it; it is what I have been looking for these twenty years, and it supplies a want that nothing else has been able to fill."

DRS. WARD and FRED. SMITH, speaking for themselves and their colleagues of the Hospital of St. Barnabas, Newark, say: "Bovinine was readily taken by the patients, was easily retained, and in many cases by stomachs which had rejected all other forms of nourishment. We believe Bovinine contains more nutriment, relative to the bulk, than any other preparation known to the medical profession."

"During the last four months of his sickness, the principal food of my father, General Grant, was Bovinine and Milk; and it was the use of this incomparable food alone that enabled him to finish the second volume of his personal memoirs.—FRED. D. GRANT."

October 1st, 1885.

Carefully prepared from the formula of the late James P. Bush, by the J. P. Bush Manufacturing Co., 44 Third Avenue, Chicago, Ill.

PUT UP IN 6 AND 12 OUNCE SIZES, AT 60c. AND $1.00 PER BOTTLE.

For Sale by all Druggists.

Principal Office, 2 BARCLAY STREET, NEW YORK CITY.



IMPERIAL GRANUM

THE GREAT MEDICINAL FOOD

THIS ORIGINAL and WORLD RENOWNED DIETETIC PREPARATION is a Substance of UNRIVALED PURITY and MEDICINAL WORTH. A solid extract derived from very superior growths of Wheat—nothing more.

It has justly acquired the reputation of being

THE STANDARD DIETETIC PREPARATION.

And has been recommended and certified to by a large number of Chemists and Physicians, representing a very high degree of medical science as

THE SALVATOR FOR INVALIDS AND THE AGED,

A SUPERIOR NUTRITIVE IN CONTINUED FEVERS,

A RELIABLE REMEDIAL AGENT IN ALL DISEASES OF THE STOMACH AND INTESTINES, (often in instances of consultation over patients whose digestive organs were reduced to such a low and sensitive condition that the Granum was the only thing the stomach would tolerate when life seemed depending on its retention), and, AN INCOMPARABLE ALIMENT FOR THE GROWTH AND PROTECTION OF INFANTS AND CHILDREN. We do not hesitate, however, in saying that no food for the nursling can at all compare with a healthy mother's yield of milk; but when the breast fails to give sufficient quantity of nourishment, or the mother's milk is lacking in nutritive substance—the IMPERIAL GRANUM is, as has been proved in thousands of cases,

THE SAFEST FOOD.

Unlike those preparations made from animal or vinous matter, which are liable to stimulate the brain and irritate the digestive organs, it embraces in its elementary composition THAT WHICH MAKES STRONG BONE AND MUSCLE, THAT WHICH MAKES GOOD FLESH AND BLOOD, THAT WHICH IS EASY OF DIGESTION, NEVER CONSTIPATING, THAT WHICH IS KIND AND FRIENDLY TO THE BRAIN, and THAT WHICH ACTS AS A PREVENTIVE OF THOSE INTESTINAL DISORDERS INCIDENTAL TO CHILDHOOD. And while it would be difficult to conceive of anything in food or dessert more creamy and delicious, or more nourishing and strengthening as an aliment in

FEVERS, PULMONARY COMPLAINTS, GASTRITIS, DYSPEPSIA and GENERAL DEBILITY,

its rare medicinal excellence in all intestinal diseases, especially in

CHOLERA, DYSENTERY, CHRONIC DIARRHŒA and CHOLERA INFANTUM

HAS BEEN INCONTESTABLY PROVEN.

Sold by Druggists. **JOHN CARLE & SONS, New York.**

THE AMERICAN ANALYST.

INDEX OF CONTENTS OF VOL. IV.

January to December, 1888.

A Baker's Profits 421
A Christian Scientist 500
A Drink of Water and its Sequel 89
Adulterated Cheese 317
Food 138
Paints 116, 185

Adulteration in Europe 256
Massachusetts 271, 481
Advertising Frauds 229
A Genuine Heathen 289
Alcoholic Nostrums 357
Alum Baking Powder 13, 69
American Analyst 189
American Dairy 339
American Drinks 47
American Dinners 495
A Microbe Fiend 476
An Ancestral Wraith 453
An Appetizing Dish 340
Aniline Colors 32
Answers to Correspondents, 4, 28, 48, 72, 92, 112, 134, 158, 182, 206, 230, 254, 274, 294, 338, 358, 378, 398, 418, 438, 458, 498
Antiseptics 185
A Physical Conscience 231
A Powerful Food Ally 399
Appetite 52
Army Diet in Japan 315
Artificial Bananas 12
Artificial Flavors 340
Art of Dining 13, 32
A Simple Remedy 256
A Strange Night 313
Atmospheric Nitrogen 339
A Useful Book 400
A Valuable Tree 71
A Wild Statement 133

Bacterial Ice 110
Baking Powders 252
Beauty's Enemy 359
Beef, as it Was and Is 459
Beer 274
Adulteration Detected 91
Analyses 77, 91
Preservatives 155
Beers, Foreign 181
Beverages our Statesmen Drink 28
Beware of the Cat 497
Biter Bitten 397
Blood Poison 32
Bogus Wines and Liquors 10
Books and Pamphlets Received, 76, 165, 188, 233, 317, 461
Borrowing Under Difficulties 253
Brain, Male and Female 189
Breathed Air 159
Business Notes, 97, 118, 140, 165, 257, 277, 341, 380
Butter and Lard 336

Calcatrani's Revenge 413
California Wines 473
Candied Fruits 116
Candy Making Hypocrites 52
Candy Poisonous 115
Capital Tastes 28
Care of the Teeth 95
Celestial Diet 10
Chamois Skins 210
Chemical Science, Its Future 359
Chicago Analysts 209
Chicago Beef the Best 479
Chinese Drug Stores in America 75
Cigarette Abomination 439
Cigarettes in Congress 181
Cigarettes Defended 459
Clothes, Care of 357
Cocoa and Chocolate 34
Coffee Swindlers 442
Colds, How Caught 46
Colored Pottery 210
Condensed Milk 6
Conscientious Clerk 1
Contagious Diseases and Epidemics 398
Contemporaries' Opinion 378
Corks, Home Made 497
Corn; a Rhapsodic Suggestion 439
Correspondence 8, 45, 69
From New Zealand 228
Vegetarianism 317
Corsets 7, 25, 46
Credulous Humanity 203
Cremation 321
In England 228
Crockery, Poison in 27, 185, 252
Cubebs 272
Curative Honey 456
Curious Foods 437
Curious Theory 156

Dangers in Upholstery 26
Deadly Cosmetics 90
Deceptive Senses 186
Diabetic Food and Gluten 299
Diamonds, Value of 97
Digestion, The Problem of 292
Dinner Plates Containing Lead 27
Dinners and Diners 316
Diseased Meat 400
Diseases from Books 180
Disinfection 161
Domestic Dietetics, 76, 96, 116, 137, 163, 188, 211, 233, 255, 275, 295, 321, 340, 360, 379, 400, 421, 441, 460, 480, 500
Do Rocks Grow? 380

Editorial ..4, 28, 48, 72, 92, 112, 134, 158, 182, 206, 230, 254, 274, 294, 317, 338, 358, 378, 398, 418, 438, 454, 478, 498
Eggs, Sea Urchin 46
And Their Value 186
As Food 420
Egg Traffic of New York City 114
Electricity in Medical Practice 116
Esoteric Life Devotion 433
European Appetites 233
European Dishes 163
Every Day Suggestions 26, 90
Every Man His Own Landlord 157

Faith Cure 13, 210
Faith Humbug 31
Fallacy of Plain Living 317
Father Schleyer's Death 440
Fine Porcelain 273, 294
Fingers and Table Etiquette 210
Financial and Industrial 78
Food Adulteration 181
Foods in New Jersey 229
Forks, Introduction of 320
Fortunes in Patents 456
French Cooks in New York 164
Dishes 377, 396, 416, 436
Mustard 397
Frog Culture a Delusion 457

Gasoline 163
Ginseng 94
Glucose, How Made 497

Hair, How to Preserve 399
Trade in 359
Health Flour 299
Health Precautions 96
Heating Houses 355, 375
Hebrew Butchers 9
Helen's Escape 153, 177, 201, 232
Hints for Emergencies 335
Hints for Housekeepers 95
Hired Wearing Apparel 2
Hirsute Electrolysis 276
Historic Gems 255
Honey Eucalyptus 456
Home Sanitation 161
Housekeeping and Cookery 4, 33, 53
House Moths 253
House Sanitation Vagaries 500
How Mirrors are Made 33
How to Drink Wine 8

Ice, Poison in 50
Ice Pollution 135
Imagination or Faith 31
Imitation a Failure 272
Impure Food 97
Impure Ice 233
Inch and Ounce 455
India Rubber 162
Industrial Notes 35, 54
Infants' and Invalids' Foods 337, 419
Insomnia 71
Insurance 109
Insurance, Life 95
Investigating Adulterations 234

Jim's Romance 353

Kitchen Recipes 421
Kitchen Reform 417
Kneipen 74

Lamp Wicks, How to Trim 420
Lard Question 3, 27
Lead Poison in Crockery 27
Liberal Margin 11
Little Known Foods 10

Maleria 29
Man's Food 165
Maple Sugar 136
Massachusetts Adulteration Laws 481
Massachusetts Adulteration 271, 293
Materialized Spectre 269
Medical Superstitions 20
Medicated Soaps 116
Meaning of Menus 37
Metals, Rare Chemical 49
Microscopic Mechanics 29
Microbes 501
Milk 89
Milk as a Beverage 420
Mind Cure 251
Mirrors 3
Modern Explosives 109
Moths, How to Destroy Them 25
Mr. Harding's Past 33
My Adventure 37

National Currency of the U. S 17
New York Beef Denounced 43
Newspaper Diet 7

Ocean Waves 11
Oleomargarine Defended 20
Olives, Their Use 209
Only a Minute 356
On Behalf of our Chemists 499
Optical Question 1
Organic Chemistry Explained 47
Other Side 11
Our Daily Food 156
Oysters in Ancient Times 477

Pamphlets and Periodicals Received 52
Paralyzing Projectiles 76
Parson Jim 129
Peanuts, Economic Use of 481
Pepsine 159
Perfumes, Domestic 113
Persian Wine Making 207
Personal Propinquity 135
Physical Caution 500
Poison in Crockery 27
In Ice 50
Porcelain 273
and Pottery 296
Ware 187
Preservative Agents in Beer 113, 136, 155
Primeval Vanity 420
Profits on Dressed Beef 132
Progress of the Period 320, 339
Pure Food 114, 501
Groceries 157
Lard Question 397

Queer Drinks 339

Rag Pickers 227
Rain Following Railroads 76
Reviews 33, 379
Refrigerator Risks 496
Rose Jars 360

Salicylic Acid 136
Saurkraut 11
School Architecture 339
Science at the Tomb 379
Scotch Oats Essence 162
Sea Kale 181
Urchin Eggs 46
Second-hand Clothing 2
Sleep 30
Chemically Considered 186
Soap a Factor of Health 133
in Popular Science 460
Soda Water 437
Some Don'ts 117
Some Every Day Suggestions 2, 135
Strange Malady 1
Submarine Springs 229
Substitute for Cremation 14
for Gum Arabic 76
Submarine Flames 500
Sugar Used at Hotels 97
Synthetic Glucose 17

Table Etiquette 210
Evolution 440
Luxury and Decoration 417
Teeth, Care of 95
Tales of the 234
The Buried Bungalow 393
The Phonograph 234
The Pure Food Bill 74
Thermometers 11
The True Reason 440
Tin Cans 226
Tobacco Using 187
Tom Middleton's Wife 225, 249

Upholstery, Dangers of 26

Valuable Hints 71
Vinegar, Cheap *vs.* Good 235
Good and Bad 94
Volapuk 5, 29, 49, 73, 93, 111

Warming the House 355, 375, 394, 417
Water 256
Weather Bureau 180
Measurers 70
Weight, How to Regulate 501
What Man Does Not Know 320
Which Beers to Drink and Which to Avoid 274
Whiskey, Good and Bad 184
Wine 138
Adulterations 9
By Dr. F. Wyatt 30, 51, 182
Maturity 339
Woman's Crown 399
Words in Common Use 320
Wrinkles, How to Cure 359

Zaroff's Revenge 493

All Postmasters will receive subscriptions for the

AMERICAN ANALYST,

UNIVERSAL TIMEKEEPER.—The geochronoscope is the latest attractive feature for the pharmacy. Mr. James Anderson, of the Dundee drug stores, has developed the idea from an invention by a local clock-maker. The geochronoscope consists of a round cylinder on which is placed a map of the world. While examining this instrument, it struck Mr Anderson that, if it could be attached to a clock and moved by the clock in such a way that the cylinder would revolve once every twenty-four hours, the relative time in any part of the world would be shown at a glance. Mr. Kelt took up the idea and has made for Mr. Anderson an instrument which is perfect in every particular. The clock is mounted on the geochronoscope. A thin, elastic cord, stretched from above to below the cylinder, acts as a meridian index, and, as the cylinder revolves, every part coming under this index is noon. There are twenty-four longitude lines on the cylinder, and these being numbered the same as an ordinary clock, the telling of the time in any given part is as simple as telling the time on an ordinary clock.—*Chem. and Drugg.*

DEVIATION OF THE PENDULUM.—A simple method of rendering visible the deviation of the Foucault pendulum has recently been devised by Mr. Campbell. The bob of the pendulum is replaced by a permanent magnet of a cylindrical form, placed with its axis coinciding in direction with the suspending wire. On a point vertically beneath the centre of suspension is swung horizontally a light bar of some magnetic material, carrying a mirror, from which is reflected a beam of light. On putting the pendulum in vibration in the vertical plane which contains the bar, the latter follows the deviation of the pendulum, which is thus rendered very visible by the corresponding reflection of the luminous beam.

CHEAP QUININE.—The *Medical Record* is not so sure that cheap quinine is an unalloyed blessing. It has come about that nearly every family now has its quinine bottle, that it is sold at many general stores, and that the doctor rarely meets an invalid who has not been thoroughly dosed with quinine. The drug, when taken continuously or excessively, is an injurious one; and its therapeutic value is greatly exaggerated in the the popular mind. The value of quinine in "colds," bronchitis, ephemeral fevers, anorexia, general malaise, and various other minor ills, the editor thinks, is most problematical.

SUBMARINE TELEPHONY.—Experiments in submarine telephony have been made by the French Government at Brest. The instrument is called hydrophone, but it is practically a microphone, and was invented by M. Barrare. The sound of a bell weighing 300 pounds, which was struck under water, was heard at the greatest distance permitted by the configuration of the bay—namely, 5,200 metres (3¼ miles). Excellent results were obtained on board a boat in motion, the bell being distinctly heard 1,400 metres off, as well as the noise of the screw of the tug on board which the surrounding instruments were placed.

A ROAD WITHOUT A CURVE.—The new Argentine Pacific Railroad, from Buenos Ayres to the foot of the Andes has on it a tangent which is probably the longest in the world. This is 345 kilometers (211 miles) without a curve. In this distance there is not a single bridge, and no opening larger than an ordinary culvert, no cut greater than one metre in depth, and no fill of a height exceeding one metre. There is almost an entire absence of wood on the plain across which the western end of the road is located. This has led to the extensive use of metallic ties, which will be employed on nearly the entire road.

FORCE WASTED BY NATURE.—It has been estimated that an average of five feet of water falls annually over the whole earth. Suppose that condensation takes place at an average height of 3,000 feet, the force of evaporation to supply such rainfall must equal the lifting of 322,000,000 pounds of water 3,000 feet in every minute, or about 300,000,000,000 horse-power constantly exerted. Of this great energy a very small part is transferred to the waters that run back through rivers to the sea, and a still smaller fraction is utilized by man; the remainder is dissipated in space.

ACIDS IN OIL.—Acids in lubricating oils may be detected by analysis in a laboratory, or by putting the sample to be tested in a clear glass bottle with a copper wire running down through the cork, air-tight; stand the whole in a sunny place for two or three weeks, and then, on removal, if verdigris or green rust appear on the copper, an acid is in the oil.

ENGLISH TIRES.—In England a tire is made for the wheels of road vehicles, which, instead of being of uniform width, is made wider at intervals of a few inches, the object being to avoid breakage of wheels and axles when coming against the side of street-car rails. The shoulders between the wide and narrow parts are sufficiently abrupt to make the wheel mount the rail as soon as one of the shoulders comes in contact with it, and the sliding and sidewise pulling, which is the cause of so many wreckages of carriages and wagons in cities, is avoided.

GLASS CONDUITS.—A Pittsburg man has invented a glass conduit which he thinks solves the problem of underground electric wires. Plates of glass are grooved on the upper surface, and the wires are laid in the grooves and cemented with pitch. Then other plates of glass are laid over the first, and wires put upon them in the same way. When all the wires are laid, the whole is enclosed in a wooden box and embedded in cement.

A SIMPLE STOVE.—Prof. Morse, of Salem, Mass., has devised a simple stove for warming rooms by means of solar heat. It consists of a shallow box, having a bottom of corrugated iron and a glass top. This device is placed outside the building, so that the sun can shine directly into it. The rays pass through the glass, and are absorbed by the metal, heating it to a high temperature, and warming the air of the box. The air, which on sunny days rises to a temperature of 90° F., is conveyed into the room which is to be heated.

A MINUTE'S PRODUCTION.—Every minute 600 pounds of wool grow in this country, and we have to dig sixty-one tons of anthracite coal and 200 tons of bituminous coal, while of pig iron we turn out twelve tons, and of steel rails three tons.

SIGHT AND HEARING.—A curious phenomenon was recently related by M. D'Arsonval before the French Academy of Medicine. After gazing for a few seconds on the arc light of intense brilliancy, he suddenly became deaf, and remained so for nearly an hour and a half. Surprised and somewhat alarmed in the first instance, but re-assured by the disappearance of the symptoms, he repeated the experiment with the same result. When only one eye was exposed to the light no very marked effect was produced.

ROADWAY FRICTION.—It is stated that if one horse can draw a certain load over a level road on iron rails, it will take one and two-third horses to draw the same load on asphalt, three and one-third horses to draw it on the best Belgian block, five on the ordinary Belgian pavement, seven on good cobblestones, thirteen on bad cobblestones, twenty on an ordinary earth road, and forty on a sandy road.

TESTING IRON.—Aquafortis, applied to the surface of steel, produces a black spot; on iron the metal remains clean. The slightest vein of iron or steel can readily be detected by this method.

A USEFUL DISCOVERY.—Poteline is the name of a mixture of gelatine, glycerine and tannin, to which sulphate of barium, or of zinc may be added, and which may be colored by vegetable colors. It may be kneeded while warm. When cold it may be used for numerous purposes. It can be turned, filed, bored, polished, and can be used for hermetically sealing bottles, etc. The proportion of ingredients varies according to the uses. For sealing bottles, of course, it must be used liquid. Potel, the inventor, uses it with success for preserving meat, by applying it liquid at a temperature of 56-60 degrees C.

AUTOMATIC GAS.—It is reported that M. Otto, the inventor of the gas engine, has constructed a new machine which automatically prepares its own gas by means of the Dowson apparatus. The new model is of eight-horse power, and only consumes two pounds of coal per horse-power per hour.

SCIENCE FOR BLACKSMITHS.—J. C. Henry, of San Diego, Cal., through the columns of the *Scientific American*, suggests a novel means of testing the condition of horses' feet. Take a battery or magneto machine, one that gives a light current, say such as can only be felt with moist hands. Attach one terminal to the animal's bit, the other to the shoe. If the horse suffers from the shoe or nails he will squirm under the test. If there be no irritation it will pay no attention to it. A little electrical science in the blacksmith shops would locate much suffering.

THE SIGNAL SERVICE.—Gen. Greely, in his annual report, says that the percentages of successful weather predictions made by the signal office for the year were 78.4; wind, 75.5; temperature, 74.2; general average, 76.7. The number of cold-wave signals displayed was 1,743, of which 1,240, or 71.5 per cent. were verified.

A LEATHER WORM.—Professor Riley, the eminent entomologist, has discovered an insect which preys upon boots and shoes. The pest can be destroyed by a vapor of bisulphide of carbon.

FIRE DETECTORS.—Electric heat indicators, consisting of thermometers incased and protected by iron tubes, provided with platinum wires, and connected with a system of electric bells and indicators on deck, are the latest invention for preventing spontaneous combustion among ship cargoes. Should any undue heat arise in any part of the cargo, the mercury in the thermometers will rise, make contact with the platinum wire, and give an instantaneous alarm on deck, indicating at the same time the exact spot where the heat exists.

SOLID FOUNDATIONS.—The question of a permanent foundation for large buildings has never been satisfactorily settled. The *American Architect* says the latest experiment tried in Chicago is to cover—before commencing the footings—the entire area of the excavation of the building with a thick stratum of concrete, laid directly upon the top of the clay hard-pan. The depth of this course is nearly two feet, and its object is to strengthen the clay that the settlement may be reduced to a minimum.

LOCATING LEAKS.—A novel method of locating a leak in a water main was employed recently at Rochester, N. Y., with entire success. The break in the main was known to be between the banks of the river. A solution of bi-permanganate of potash was introduced at a hydrant on the side of the river nearest the reservoir, and observers were stationed on the river along the line of the main. A deep reddish purple discoloration of river water at one point soon made the exact location of the leak apparent.

NEW ANATOMY.—*Life* has the honor and glory of the following: "I supposed you learned at Vassar the inexplicable difference between the anatomy of a dog and that of other animals?" (Young lady who had just been graduated with an M. D.): "Why-er-no, that I remember. What is it?" Bruit: "His lungs are the seat of his pants."

CORN COB FIRE-KINDLERS.—Put six gallons of water into a boiler with one pound of saltpetre. Heat it to the boiling point, and then put in as many cobs as the water will cover. Let them stand a short time, and then take them out and place in the sunlight until thoroughly dry, when they can be easily lighted with a match, and will make a hot fire.

QUICKSAND.—Quicksand is composed chiefly of small particles of mica mixed largely with water. The mica is so smooth that the fragments slip upon each other with the greatest facility, so that any heavy body which displaces them will sink and continue to sink until a solid bottom is reached. When particles of sand are ragged and angular, any weight pressing on them will crowd them together until they are compacted into a solid mass. A sand composed of mica or soapstone, when sufficiently mixed with water, seems incapable of such consolidation.

LUMINOUS BACTERIA.—According to the *Naturforscher*, Professor Pfluger and Dr. Tilanus have succeeded in cultivating, by Koch's method, the bacteria which produce the luminosity of sea fish. They have also been able to place them on a glass slide, which, in the dark, appeared thickly strewn with luminous points. Prof. Van Haren Noman has succeeded in photographing them.

SUGAR CANE.—It is said that the variety of sugar cane grown in the West Indies originally came from the Sandwich Islands, being brought from that country by Captain Bligh as long ago as 1796. Great efforts are being made to introduce new canes, hoping they will be richer in yield of sugar, but nothing yet has been found that has supplanted the old variety, though there is said to be a cane called the Jamaican which is very rich in saccharine properties, and which stands dry weather, and may ultimately supersede the old-fashioned kind of cane.

PHYSICIANS'
Club Rates on Valuable Journals.

The American Analyst.

A Semi-monthly Review, devoted to Industrial Progress, Sanitation, the Chemistry of Commercial Products, and the Suppression of Adulteration. This journal contains just the information, the possession of which is valuable to the practitioner in his intercourse with patients. $1.00 per year.

The American Medical Digest.

A Monthly Epitome of the best, most practical and useful Papers contained in the Medical Publications of the world. A current record of the Monthly Progress of Medical Science. $2.00 per year.

We will send these two together to any address for $2.00 per year.

We also receive Subscriptions for the following Medical Journals. In each case the publishers' price is given and the price for which we will send that particular Journal with the ANALYST and the DIGEST:

	PUBLISHER'S PRICE.	WITH DIGEST AND ANALYST.
Albany Medical Annals	$1 00	$2 75
Ann Arbor Med. Counsel'r (Hom.)	2 00	3 75
Ann Arbor Phys'n and Surgeon	2 00	3 75
Atlanta Med. and Surg. Journal (Only new subscribers taken.)	2 50	4 00
Austin (Tex.), Daniel's Med. Journal	2 00	3 75
Boston Annals of Gynæcology	2 00	3 50
Boston Journal of Health	1 00	2 75
Boston Med. and Surg. Journal (Outside of New England only.)	5 00	6 00
Chicago, Jour. of Am. Med. Association	5 00	6 00
Chicago Medical Jour. and Ex	3 00	4 50
Chicago Medical Times	2 00	3 75
Chicago, Western Med. Reporter	1 00	3 00
Cincinnati Med. and Dental Journal	1 00	3 00
Dallas (Tex.), Courier Rec. of Med	2 00	3 75
Detroit, American Lancet, Mo	2 00	3 75
Detroit, Index Medicus (A Monthly Classified Record of Med'l Liter.)	10 00	10 00
Detroit, Leonard's Ill. Med. Monthly	50	2 35
Detroit, Medical Age (Semi-Monthly)	1 00	2 75
Gilsum (N. H.), Quarterly Review of Narcotic Inebriety	1 00	2 75
Indianapolis (Ind.), Ecl. Med. Journal	1 00	2 75
Indianapolis Medical Journal (Outside of Indiana only.)	1 00	2 75
Kansas City, Western Med. Jour	2 00	3 75
Louisville, Medical Investigator	50	2 35
Nashville, Jour. of Med. and Surg	2 00	3 75
New Orleans, Med. and Surg. Journal	3 00	4 75
New York, Sanitary Era	1 00	2 75
Braithwaite's Retrospect	2 50	3 50
The Epitome	2 50	3 50
New York Medizinische Presse (The only *German* Medical Journal in U. S.)	2 50	3 75
Philadelphia Hahnemannean (Monthly) (New Subscribers only.)	3 00	4 25
Phila. Med. and Surg. Reporter	5 00	6 50
Philadelphia Medical Summary	1 00	2 85
Philadelphia Medical Register	2 00	3 50
Phila. Archives of Pediatrics (The only Journal devoted to Infants' Diseases.)	3 00	4 50
Philadelphia Medical World	1 00	2 85
Philadelphia Medical Times	2 00	3 75
Sacramento Medical Times	2 50	4 00
San Francisco Pacific Med. and Surgical Journal	3 00	4 50
St. Louis Medical Brief	1 00	2 90
St. Louis American Med. Journal	2 00	3 25
St. Louis Med. and Surg. Journal	2 00	3 25
Toronto, Canadian Practitioner	3 00	4 50

More Journals will be added to this List.

Attention is called to the Special Journals in this List, such as the

Boston Annals of Gynæcology,
Detroit Index Medicus,
New York Medizinische Presse,
Phila. Archives of Pediatrics.

Address,

The ANALYST PUBLISHING CO.
19 PARK PLACE,
NEW YORK.

ARMOUR & CO.
CHICAGO, ILLS.

PACKERS OF

Pork and Beef Products

CANNED MEATS,

ETC.,

FOR HOME CONSUMPTION AND FOR EXPORT

TO ALL PARTS OF THE WORLD.

Also,

SHIPPERS OF

Choice Dressed Beef,

MUTTON AND HOGS,

In Refrigerator Cars,

To BOSTON,
NEW YORK,
PHILADELPHIA,
BALTIMORE,

And other cities throughout the country.

Pure LAGER BEER,
"IMPERIAL" and "CULMBACHER"
Brewed & Bottled
SPECIALLY FOR
HOTELS, CLUBS
AND
PRIVATE FAMILIES
BY
Beadleston & Woerz
291 W. 10th St. New York.
Orders by Postal Card promptly attended to.

Established in London, 1831.

DEAN'S PATENT

ARDENTER MUSTARD.

BEST IN THE WORLD.

WARRANTED ABSOLUTELY PURE.

PATENT OFFICE UNITED STATES OF AMERICA 1871

WARRANTED ABSOLUTELY PURE.

Ardenter Mustard Pellets.

— FOR —

Dyspepsia and Indigestion.

UNIVERSALLY recommended and prescribed by physicians. The medicinal property are English mustard seed coated with pepsin and sugar. You will find it will relieve you after using two or three doses. It is very beneficial for Heartburn, Sour Stomach and Headache. They are a beautiful confection for children. Each bottle contains full directions.

W. G. DEAN & SON,
361 and 363 Washington Street, 84, 86 and 88 North Moore Street, New York.

MALTINE

MALTINE is far superior in nutritive and diastatic value to any Malt Extract manufactured in the World. There is no reconstructive that excels Maltine in Phthisis and many wasting Diseases.

MALTINE in its different forms is the only malt preparation we now employ, being so palatable, digestible, and easily assimilated. Of its efficiency in appropriate cases there is no more doubt in our minds than there is of the curative power of Quinine, Cod Liver Oil, the Bromides, and the Iodides.

It deserves to stand in the front rank of constructives, and the constructives by their preventive, corrective, and curative power are probably the most widely useful therapeutical agents that we possess.
PROF. L. P. YANDELL.

MALTINE is a valuable food, a food of priceless value at times of emergency. In fact, in very grave gastric cases it is a food which may be often resorted to when at one's wits end what to do.
J. MILNER FOTHERGILL.

Out of 14 trade samples of Malt Extract examined by Messrs. Dunstan & Dimmock, ONLY THREE possessed the power of acting on starch. These brands were MALTINE, Corbyn, Stacey & Co.'s Extract, and Keppler's Malt Extract. WILLIAM ROBERTS, M.D., F.R.S.

I have subjected "Maltine" and all other leading "Extracts of Malt" to an exact quantitative comparison of their diastatic activity. The results demonstrate conclusively the far greater diastatic value of Maltine, and enable me to state, without any qualification whatever, that it far exceeds in diastatic power any of the six preparations of Malt which I have examined. R. H. CRITTENDEN.
Professor of Physiological Chemistry in Yale College.

At the International Health Exhibition held in London, England, the only gold medal and the highest award of merit were given to Maltine by a Jury composed of the best chemists in Europe, and recent analyses made by the most reliable authorities in Europe and America prove conclusively that Maltine—in nutritive and diastatic value—is superior to all other malt preparations now in the market.

NOTE.—Physicians will observe that Maltine, as now prepared, is not so viscid as formerly made, being of a more fluid consistency; and, while retaining the nutritive and diastatic value which has given it precedence over all other Extracts of Malt, it is rendered entirely agreeable to the taste of the most fastidious, and is more easily administered. As now prepared, we positively guarantee that Maltine will not ferment or congeal in any climate or at any season of the year.

COMPLETE LIST OF MALTINE PREPARATIONS.

MALTINE (Plain).	MALTINE with Phosphates, Iron Quinia, and Strychnia.
MALTINE with Alteratives.	MALTINE Ferrated.
MALTINE with Cod Liver Oil.	MALTO-YERBINE.
MALTINE with Hypophosphites.	MALTO-VIBURNIN.
MALTINE with Peptones.	MALTINE with Cascara-Segrada.
MALTINE with Pepsin and Pancreatine.	

Physicians may obtain Maltine from all druggists in every part of the world. In cases where the physician intends to prescribe Maltine, the word "Maltine" should be written, and not simply the words "Malt Extract," or "Extract of Malt."

Send for Pamphlet giving comparative analyses by 100 of the best Analytical Chemists in this country and Europe.

We will be happy to supply any regular practitioner with eight ounces each of any three Maltine compounds that may be selected from our list, providing he will agree to pay express charges on same.

THE MALTINE MANUFACTURING CO.,
54 Warren Street, New York.

Laboratory, Yonkers-on-Hudson.

In corresponding with Advertisers, please mention the AMERICAN ANALYST.



Its superior excellence proven in millions of homes for more than a quarter of a century. It is used by the United States Government. Endorsed by the heads of the Great Universities as the Strongest, Purest, and most Healthful. Dr. Price's Cream Baking Powder does not contain Ammonia, Lime or Alum. Sold only in cans.

PRICE BAKING POWDER CO.
NEW YORK. CHICAGO, ST. LOUIS.

STERLING



BAKING POWDER

MADE FROM
99 50/100 PURE CREAM TARTAR.

This powder never varies. A marvel of purity, strength and wholesomeness. More economical than the ordinary kinds. SOLD ONLY IN CANS.

STERLING MANU'F'G CO.,
12 & 14 Spruce St., New York.

"GOOD MORNING"
COFFEE PERCOLATOR.

RICHEST, PUREST, BEST CUP OF COFFEE EVER MADE.

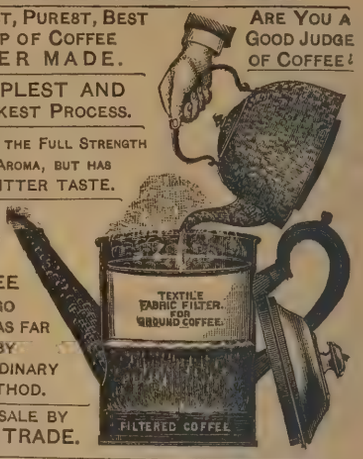
ARE YOU A GOOD JUDGE OF COFFEE?

SIMPLEST AND QUICKEST PROCESS.

RETAINS THE FULL STRENGTH AND AROMA, BUT HAS NO BITTER TASTE.

ONE POUND OF COFFEE WILL GO TWICE AS FAR AS BY ANY ORDINARY METHOD.

FOR SALE BY THE TRADE.



IF YOU CANNOT PROCURE IT IN YOUR TOWN, WRITE TO

MANNING, BOWMAN & CO.
57 Beekman St., New York.
Circulars and Price List sent Free on Application.

AMERICAN ANALYST CLUB RATES.

	Regular Price.	Price including American Analyst.
American Magazine	$3 00	$3 25
American Rural Home	75	1 05
American Agriculturist	1 50	1 60
Art Amateur	3 50	4 00
Arthur's Home Magazine	2 00	2 00
Art Interchange	3 00	3 25
Babyhood	1 50	1 60
Ballou's Magazine	1 50	1 75
Bedford's Magazine	2 50	3 00
Cassell's Family Magazine	1 50	1 75
Century	4 00	4 25
Christian Herald, N. Y.	1 50	1 50
Christian Union	3 00	3 00
Cottage Hearth	1 50	1 50
Country Gentleman	2 50	2 50
Current Literature	2 50	2 75
Demorest's Magazine	2 00	2 00
Family Story Paper	3 00	3 00
Farm and Fireside	50	1 00
Fireside Companion	3 00	3 00
Forum	5 00	5 00
Frank Leslie's Illustrated Newspaper	4 00	4 00
Frank Leslie's Popular Monthly	3 00	3 00
Galaxy of Music	1 00	1 25
Gleason's Home Circle	2 00	1 50
Godey's Lady's Book	2 00	2 25
Golden Days	$3 00	$3 00
Good Housekeeping	2 50	3 00
Harper's Bazar	4 00	4 00
Harper's Young People	2 00	2 25
Harper's Weekly	4 00	4 00
Harper's Monthly	4 00	3 50
Household	1 10	1 35
Housekeeper	1 00	1 25
Ledger	3 00	3 00
Lippincott's Magazine	3 00	2 50
New York Weekly	3 00	3 00
Our Little Ones and Nursery	1 50	1 65
Peck's Sun	2 00	2 25
Peterson's Magazine	2 00	2 00
Puck	5 00	4 50
Rural New Yorker	2 00	2 30
Saturday Night, Philadelphia	3 00	3 00
Saturday Evening Post, Philadelphia	2 00	2 00
Scientific American	3 00	3 25
Scribner's Magazine	3 00	3 00
Vick's Illustrated Monthly	1 25	1 50
Western Rural	1 50	2 00
Wide Awake	2 40	2 60
Yankee Blade	2 00	1 50
Young Ladies' Journal	4 00	3 50
Youth's Companion	1 85	2 25

If any paper is desired, not mentioned in the above list, a postal card inquiry will receive a prompt reply. Address,

THE ANALYST PUBLISHING CO.,
19 Park Place, New York.

See Club Rates for Medical Journals on page 515.

The Standard of Excellence.

KINGSFORD'S

OSWEGO

Pure and Silver Gloss



STARCH

KINGSFORD'S
OSWEGO CORN STARCH
FOR
Puddings, Custards, Blanc-Mange, Etc.
THE PERFECTION OF QUALITY.
WILL PLEASE YOU EVERY TIME.
Always ask your Grocer for these goods.

Is the Baby

A constant joy, or are your days and nights filled with sleeplessness and anxiety? Feed on

RIDGE'S FOOD.

Children are well and happy. WOOLRICH & Co. on label.

UNIVERSITY OF ILLINOIS-URBANA
3 0112 120356594